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NINETEENTH ANNUAL REPORT

OF THE

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Illinois State Beekeepers' Association

Organized February 26, 1891, at
Springfield, Illinois

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Compiled by
GEORGE M. WITHROW, Secretary
Mechanicsburg, Illinois

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1920

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LETTER OF TRANSMITTAL.

OFFICE OF THE SECRETARY,
MECHANICSBURG, ILLINOIS, *July 1, 1920.*

To His Excellency, Frank O. Lowden, Governor of the State of Illinois.

SIR: I have the honor to transmit herewith the Nineteenth Annual Report of the Illinois State Beekeepers' Association.

Respectfully submitted,

GEORGE M. WITHROW, *Secretary.*

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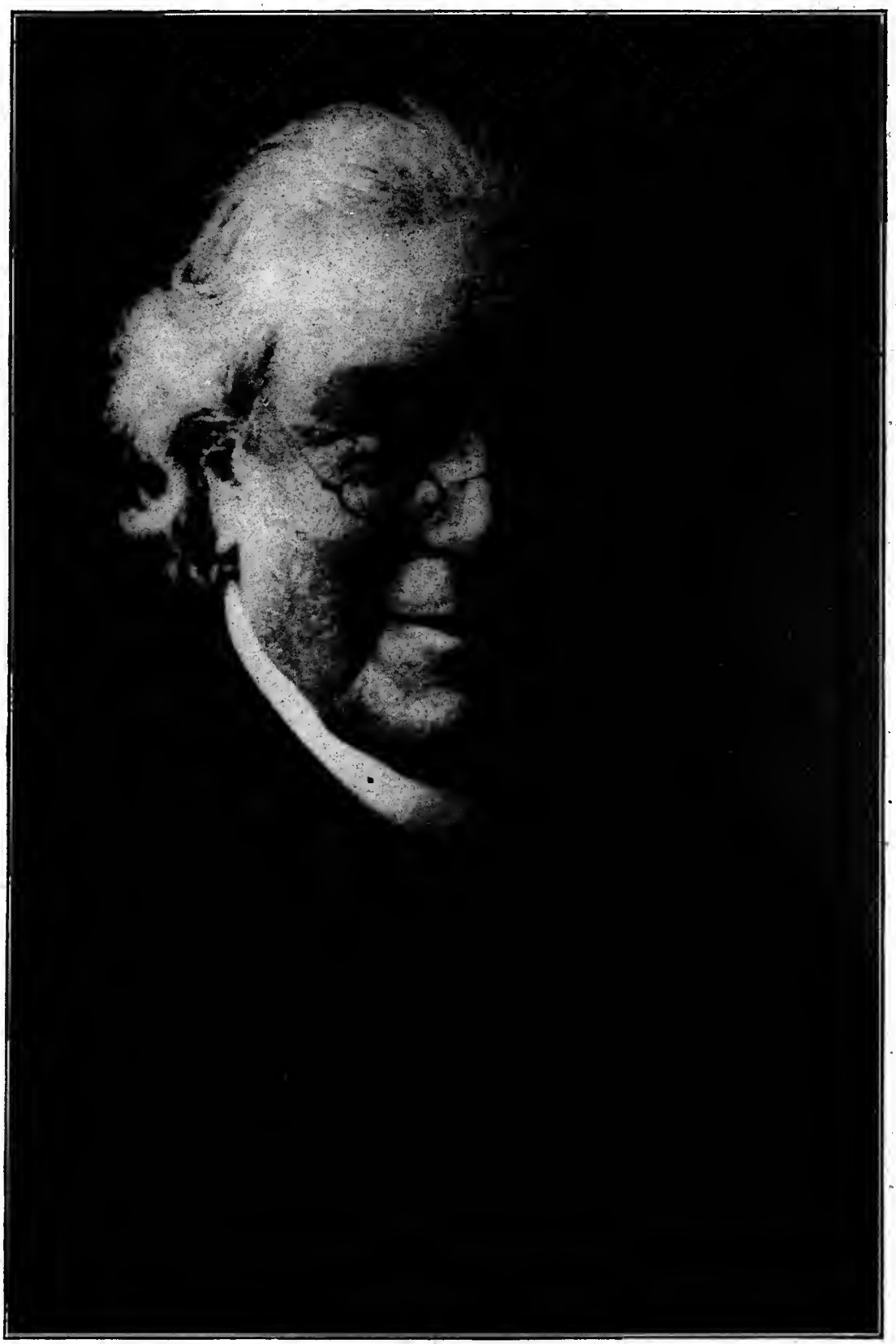

FATHER LANGSTROTH,
1810—1895
Inventor of the Movable Frame Hive.

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OFFICERS OF THE ILLINOIS STATE BEEKEEPERS' ASSOCIATION FOR 1920.

DR. A. C. BAXTER . . . . . President
Springfield.

A. L. KILDOW . . . . . Putnam
State Inspector of Apiaries.

VICE PRESIDENTS.

1ST JAS. A. STONE . . . . . Farmingdale

2D AARON COPPIN . . . . . Wenona

3D W. H. WILLIAMS . . . . . Pekin

4TH C. F. BENDER . . . . . Newman

5TH HARRY L. KING . . . . . Springfield

GEORGE M. WITHROW . . . . . Secretary
Mechanicsburg.

GEO. SEASTREAM . . . . . Treasurer
Pawnee.

List of members will appear in back of Report. Also Index.

DR. A. C. BAXTER,

President of the Illinois State Beekeepers' Association.

PROCEEDINGS

OF THE

TWENTY-NINTH ANNUAL SESSION

OF THE

Illinois State Beekeepers' Association

Tuesday and Wednesday, Dec. 9-10, 1919

Leland Hotel, Springfield, Illinois

GEO. SEASTREAM,

Treasurer of the Illinois State Beekeepers' Association.

PROCEEDINGS OF THE ILLINOIS STATE BEEKEEPERS' ASSOCIATION.

The Twenty-ninth Annual Meeting of the Illinois State Beekeepers' Association was held in the sun parlor of the Leland Hotel, December 9 and 10, 1919.

The meeting was called to order by the President, Dr. A. C. Baxter, at 10 a. m., December 9.

PRESIDENT BAXTER.—Gentlemen, you will arise and be attentive while the Reverend J. H. Morphis, of Farmingdale, pronounces the invocation.

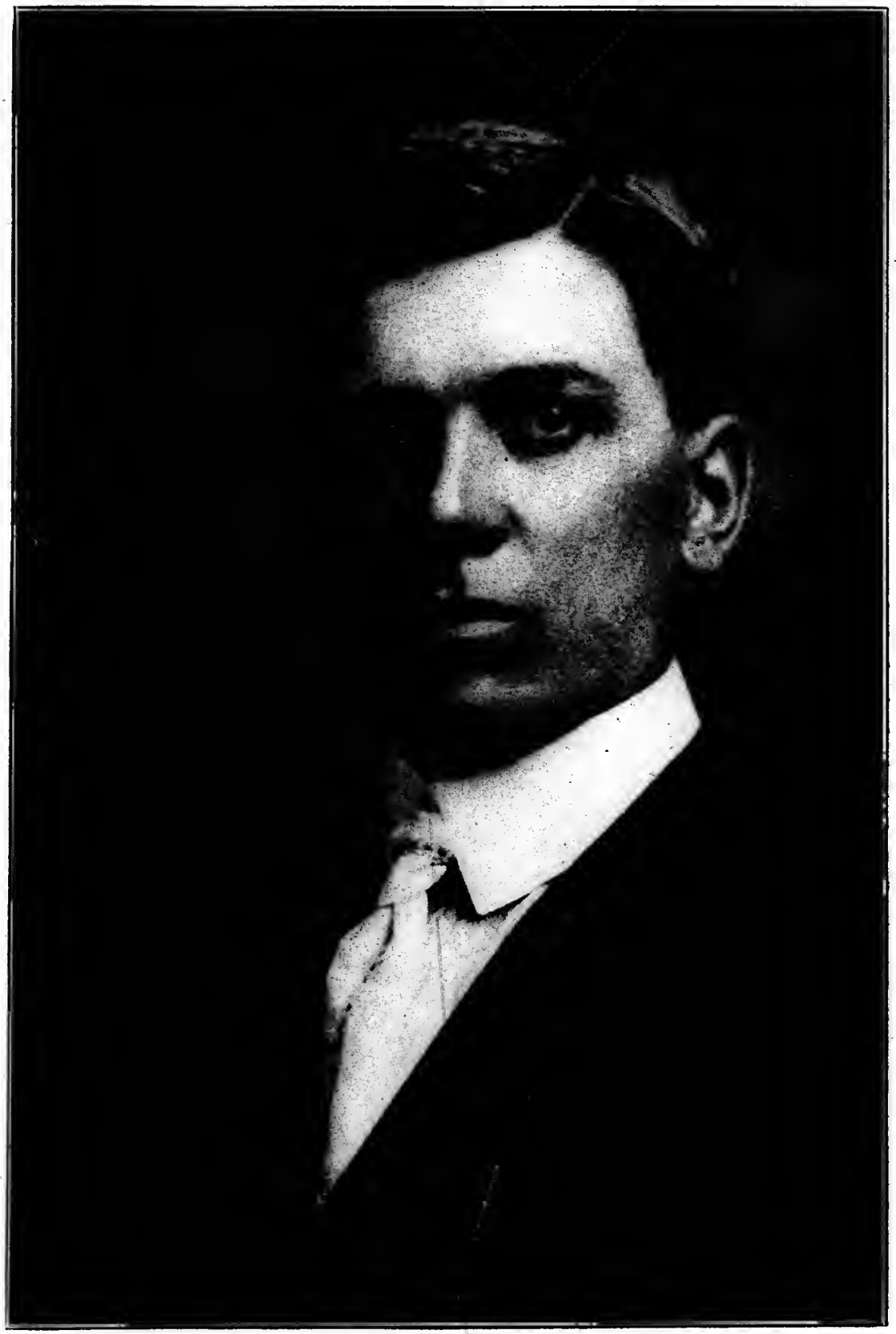
INVOCATION BY REVEREND J. H. MORPHIS.

Almighty God, our Heavenly Father, the Creator of the heavens and the earth: Thou who hast made the seas and the brooks, Thou who hast given unto us the birds to sing about our door, Thou who hast sent forth the beautiful flower to meet our desires and to cause our admiration for all creatures of the heavens and the earth, to be adored within us, with all the beautiful things with which Thou hast endowed the sea, the earth and the sky, we give thanks unto Thee. We pray Thee to draw nigh unto us this morning and help us to realize that we walk not alone, that we come not by chance into this great field of activity, that we are here by the divine hand of the Almighty, whose providence rules and reigns above and over us and in us, to take unto himself those who would please him in the toil of life.

Thou who hast taught us to labor and given unto us the rewards of our labor, we thank Thee for every gift that is bestowed upon the world of mankind. Thou hast called men into every department of life and endowed them with a mind to grasp the truth, to delve into the hidden things, to find the coal, to dig the ore, and to reveal the gold that Thy hand hath hidden, that we might have all these things for our comfort and use and for Thy glory.

Bless, we pray Thee, in a very special manner this assembly of men for whom our hearts return thanks this morning, for the men who have loved the bee, who have sought his company and association, who have cared for him and have kept him from perishing from the earth, the bee which Thou hast made to bring to every boy and girl the answer to the appeal that comes out of their very nature for something that is sweet. Thou hast given unto them the honey and the honeycomb.

We pray that the blessing of God may be upon these men who undertake to spread abroad the sweetness that belongs to the very king-



GEORGE M. WITHROW,

Secretary of the Illinois State Beekeepers' Association.

dom of God. Bless, we pray thee, their efforts until they shall satisfy the crying heart of the whole earth with the sweetness which Thou hast provided for their own taste and comfort. Prosper them and give unto them the labor of their hands; may they feel they are laboring for the good of mankind when they care for the bees in their home. Guide us, we pray Thee, through this day, shield us from all accident and harm, keep us in the love of Him who died for us, and gather us to Thyself in peace in the end, beyond the silent River of Death into that house not made with hands that is eternal in the heavens, and Thy name shall have all the praise. We ask it in His name. Amen.

THE PRESIDENT.—The next order of business is the minutes of the last meeting. That does not include the whole report, but just the minutes.

Mr. Stone read the minutes.

THE PRESIDENT.—Members of the Association, you have heard the reading of the minutes. Are there any additions or corrections? If not, they stand approved as read.

PRESIDENT'S ADDRESS.

Members of the Illinois State Beekeepers' Association, Ladies and Gentlemen:

It is with mingled feelings of affection, pride and pleasure that I greet you at this our Twenty-ninth Annual Meeting. During the life of this association humanity has marched onward and upward. The pealing chime of that old bell in Independence Hall was echoing around the world. Man, so long bowed down by the yoke of despotism stood up again in the proud image of his Maker and turned a face lighted with hope toward Heaven. That monster lie of the dark ages; the divine right of kings, saw with fear and rage the coming dawn of a new day and knew that the time of the end was at hand. The dragon came forth from his lair to do battle to the death.

On the one side stood arrayed human right, justice, liberty the faith of mankind in all that is holiest and most sacred alike in the doctrine of the Hebrew and the Christian, the law of Moses and the Golden Rule. Opposed to these stood the grey grim phalanx of military despotism, an imperial murder-bund of tyranny that knew no law but force, the old brute law of the savage wilds.

Thank God, the awful hurricane of death is past. No longer does the thunder of those monster guns shake the world. No longer falls the ghastly red dew of battle upon scarred and shell-torn fields of Belgium and France.

When man's savage passions have burst forth in the tempest of war, the mighty storm clears not in a moment. The shattered clouds of war sulk away and on the far horizon we hear their low, angry mumblings of Bolshevism and ancient racial feuds. But the sun has begun to

shine through the clouds. The man of the soil, the farmer, the beekeeper have not given ear to the false doctrine of a Lenine, a Trotsky or a Goldman, but has resolutely returned from war and gone back with renewed energy to their former occupation to aid in feeding a hungry world.

The food supply of the world has been and will be for several years to come inadequate to supply the needs of humanity. This applies especially to the sweets. People are finding out that sugars are foods and to be used as such, not as a condiment as one uses pepper. Never before has there been so great a demand for honey, and to supply this demand, we do not necessarily need more beekeepers, but better beekeepers, keeping better bees and more of them. One is impressed with the vast quantity of nectar annually going to waste for want of bees to collect it, but this waste will not be remedied by advising every farmer to keep bees, but by working out ways in which those who are already beekeepers can manage a greater number of colonies than at present, bringing higher returns for the labor expended. If one could keep double the number of colonies, his gross returns would be doubled, and the increased profit to the occupation would soon induce others, having the necessary aptitude to learn, to do likewise.

Many beekeepers are somewhat afraid to increase their number of colonies for fear that foul brood diseases might gain a foothold in their apiaries and thus take more effort to eradicate these diseases. While this appears foolish to a thoughtful beekeeper nevertheless the more timid ones have that fear. We should therefore exert our best efforts to the eradication of bee diseases. Our inspection system should be one of education as well as the use of the police powers of the State. Instead of having a single inspector with a half dozen deputies who do not receive enough pay to devote their whole time to inspection work we should have an inspector with two deputies whose salaries are such that they can devote their entire time to inspection and educational work. We have no criticism of our present inspector and his deputies, they are doing the best they can with the limited means at their disposal. The plan I propose would envolve a greater expenditure and would necessitate a greater appropriation, but the great State of Illinois could well afford to expend more money in the interest of our industry, as the returns would more than offset the amount expended in this work.

Every effort should be made by the association to induce the University of Illinois to give a course in bee culture. There is hardly a day goes by but what we have inquiries in regard to short courses in beekeeping. Our State should not be behind in this matter but its educational advantages should be as good and great as that of our sister states.

The past season to a great many was one of great disappointment. Due to general atmospheric conditions clover yielded just enough to keep

the bees alive and in some localities not even that. But to those who had not lost heart and had kept their bees in the best possible condition, were rewarded by an excellent fall flow so that in the majority of cases the bees have gone into winter quarters with sufficient stores. If you have protected your bees from the wind and cold and have given room for the rearing of brood at appropriate time, we can see no reason why you should not receive better returns this coming season than in the one that has just past.

The successful beekeeper is he who studies his bees and is prompt with his manipulations. Beekeeping is not a paying business for the shiftless beekeeper. The specialist beekeeper is the most desirable from the standpoint of the industry because the small holder usually has not sufficient interest in the bees to see that they do their best, but there is no reason however, why a few colonies of bees will not be profitable, provided the owner gives intelligent care.

I will appoint in charge of the question box Mr. C. F. Bender.

THE PRESIDENT.—If anyone has any question to ask about beekeeping, make out your question and give it to Mr. Bender.

Another question coming up is the question of fees and dues for next year. This was brought up a year ago and laid over, according to the constitution, until this time. That must be disposed of now before we can collect dues. Has anyone anything to say in regard to the fees and dues?

MR. DADANT.—Mr. Chairman, the difficulty is that in this matter of dues we have branch associations, and it is difficult without a dollar to give the branch associations a share and leave a sufficient amount for the State Association. That is why the motion was made, I think, last year, and then found to be out of order to increase the membership fee to a dollar and a half. Was it not, Mr. Secretary, a dollar and a half?

THE PRESIDENT.—Yes, the motion before us last year was to raise the fees to a dollar and a half instead of a dollar.

MR. DADANT.—There is a tendency to join the subscription to the bee journals to this membership, and that increases the difficulties. Now, as a representative of one of the journals, I do not know that I ought to say much in regard to that, but I can appreciate a statement made in regard to Gleanings, refusing to give free subscriptions. The subscription price is seventy-five cents to the association or to the members and it is impossible or impracticable, at present prices of everything in the matter of magazines, to give free subscriptions, but this is entirely outside the matter under discussion. I think we should consider only the question whether we should raise the fees so that we can take in the membership of other State association, that is; the Northwestern, the Illinois, the Northern Illinois and Southern Wisconsin, in fact, three or four of them, and there would probably be more. I think

we would be stronger if we could do that. That is why the question is brought forward, and I think we ought to discuss it before any motions are made and passed.

SECRETARY STONE.—Mr. President, was that motion made at the last meeting, to raise it to a dollar and a half? I thought it was that the fees be changed.

THE PRESIDENT.—That the fees be changed to a dollar and a half. A motion was made and we voted on it and it was carried, and then we discovered it was unconstitutional, so it was left out of the reports because it was unconstitutional. It was out of order.

SECRETARY STONE.—Mr. President, I think that if we can avoid changing the by-laws that we ought to do it all the time, and I think there is a way that we can do it that will be the best and easiest way, and in my mind the only way. "Any person interested in apiculture may become a member upon the payment to the Secretary of an annual fee of one dollar," as amended November, 1905, then give them the American Bee Journal, that is aside from our by-laws. Our by-laws provide that the fee shall be one dollar. The executive committee with the editors of the American Bee Journal and Gleanings made the arrangement that they would give us the club rate of seventy-five cents, so that we have only gotten twenty-five cents out of every fee sent in. This same arrangement can be made between the executive committee and the editors by consent of the meeting. We can't do it any way but by consent of the meeting; they do not feel they are authorized to make the rate, and I would suggest that we leave this just as it is, one dollar for membership, and that is membership only, and fifty cents for affiliated society. That will not have to be changed at all. Then if they want the American Bee Journal, put it at a dollar and a half and then we will give them twenty-five cents out of our dollar, and if they want both journals two dollars, and then we give them fifty cents out of our fee, so that our minimum fee would be fifty cents. Now it is only twenty-five. No wonder our treasury fund doesn't increase any more, although we did increase the difference between one hundred and twenty-five dollars and one hundred and forty-three, I believe it was. We increased that much this year over last year, and with this rate I think the increase will be a great deal more. I make a motion to amend that motion by leaving this just as it is and instructing the executive committee to make the arrangement along that line that I have specified.

THE PRESIDENT.—Has anyone anything to say on this subject? Don't be afraid to talk about it. Mr. Bender, have you anything to say?

MR. BENDER.—I think it is merely a question of the way it is stated. But I think it is easier, in asking new members to join, and more attractive to put the journal with it always. It seems that way to me, that in getting new members they will take it so much more readily. The journal, to a man not much interested, seems more

attractive than the association. He don't know what he is getting if he belongs to the association if he never attends the meetings, and I think if it isn't too much trouble we should change the by-laws. It is merely a matter of a majority vote, isn't it? If it can be done by a majority vote, I am in favor of changing the by-laws to include the higher rate and the journal with it.

THE PRESIDENT.—Mr. Stone's idea is that we leave it at one dollar and ask fifty cents additional if he takes the journal.

MR. BENDER.—Well, that is exactly what I object to, if I have to solicit for members.

SECRETARY STONE.—Mr. President, I will make it plainer. We send out printed matter every year, we will do it now just as soon as this meeting is over. We do not know how much it will be delayed because it has to go through the State printer's hands and we do not control that at all. Sometimes it is very much delayed.

MR. DADANT.—This is not on the same question, is it?

MR. STONE.—Yes, I am talking right to the question. One dollar for annual membership entitles the member to participate in all the benefits arising therefrom, a cloth-bound copy of the coming annual report and a free copy either of the American Bee Journal or Gleanings for one year, both for seventy-five cents. Now, if the executive committee is properly instructed they will publish this kind of sentence at the top of the page: "For membership in the State Association, one dollar." "If you desire the American Bee Journal or Gleanings, $1.50. If you desire both, $2.00." Then if anyone sends us just one dollar we know it is for membership fee. If they send one dollar and a half it is for Gleanings or the American Bee Journal. If they send two dollars we will give them both bee journals. Then our fee will be fifty cents, and that is the lowest we can put it down. We will get fifty cents, no matter what they want. In the other case you will have to charge them two dollars and twenty-five cents in order for us to get seventy-five cents out of it. If thirty-nine took both journals we would only lose twenty-five cents on that money, below what we would if we got seventy-five cents on all of them. We will hear from others. though.

MR. SEASTREAM.—Mr. President: We are all familiar with the saying that nothing goes better with bees than more bees, so I believe there is nothing that goes better with a beekeeper membership than a good bee paper, and in regard to making a short cut, as Mr. Stone says, better make a clean sweep of it and change the constitution.

THE PRESIDENT.—You would make it a dollar and a half then?

MR. BENDER.—Yes.

THE PRESIDENT.—And give a journal?

SECRETARY STONE.—Mr. President, that would not be but seventy-five cents fee.

THE PRESIDENT.—Yes, that would.

SECRETARY STONE.—How?

THE PRESIDENT.—If we make the fee a dollar and a half and give the journal, you are getting twenty-five cents more than you are getting at the present time.

SECRETARY STONE.—That is true, but not more than I am suggesting. I am suggesting that we have our fee one dollar, no matter if they take nothing else. Then if they want the bee journal they are to pay a dollar and a half.

THE PRESIDENT.—Mr. Stone, the question that seems to be raised here is to have the man take the bee journal, which I think is a very wise provision. If the fee is a dollar and a half he gets the bee journal whether he wants it or not.

SECRETARY STONE.—That makes it a little more binding, some of them don't want any.

THE PRESIDENT.—They have got to take it.

MR. DADANT.—Mr. Williams here, has had some experience in the matter. Let us hear from him.

MR. WILLIAMS.—Mr. President, I consider myself today as a kind of visitor. I wasn't with you last year.

SECRETARY STONE.—You are a member, Mr. Williams.

MR. WILLIAMS.—Oh, sure, I know that. The whole point to the success of the beekeeping industry is the bee journal. That is my idea. You can have an association of five hundred members in this State, and if they do not take a bee journal they do not know anything about what is going on except individually. The prime thing, I think, to do, is to get the bee journal. Of course, I am not in touch with these things, and maybe shouldn't say very much, but the point that I see is the treasurer's report. How much money is in the treasury today? Four hundred and some odd dollars, as I remember it. That is an increase over what we had last year. It doesn't matter about the exact figures, it was around one hundred and eighty-seven, and it has increased this year by nearly three hundred dollars. We have this little fee of twenty-five cents that we keep in the treasury for our own use, why increase it. As a gentleman sitting near me said, under his breath, in soliciting for members to the association, the thing that you have got to do is to get the member in the association by the bee journal. You can't get people in my territory to join this association, they wouldn't think about putting a dollar into it if they didn't get the bee journal. That is the idea I have.

MR. DADANT.—That is correct.

MR. WILLIAMS.—So, make the association a part of it, not join the association for one dollar and then have the journal for fifty cents, because they will turn you down cold. I helped to bring into this association last year and the year before something like fifty members for one dollar apiece. We got nothing out of it. The secretary and myself stood a good deal of expense, that I do not regret. Our idea was not the

association, up there, so much as we wanted to have a good time, and I think Brother Dadant can say we have had two or three as profitable meetings that have been held in the State, by our little association there. We went out with this idea: you can join the Illinois River Valley Association and get the American Bee Journal, the State Association, for a dollar. That made the beekeepers come in. We had a little meeting there, two years ago, over sixty people were present, with a little advertising around the community. That is more than you will have here today, so the thing to do I think is to make the fee as small as possible, to get through with. We do not need any money in the treasury. I am not going to say I am opposed to a dollar and a half, but make the Bee Journal the opportunity to get them in.

MR. DADANT.—As one of the representatives of the journal, I feel that a little too much prominence is given to those publications simply because they are private concerns. If you speak of bee journals, make it general. If you offer magazines, offer any of those published in America on an equal footing, otherwise other people will feel that some partiality is being shown to the publications.

I am very much pleased with Mr. Williams' statement. On the other hand, I know there is a situation whereby the journal gets seventy-five cents out of the dollar and there is only twenty-five cents left for the two organizations, the local one and the State. Although we haven't much expenses, we do have to keep up some things. We have to pay something to our secretary, he gets barely enough, and it looks to me, if you are going to give one of the journals to your members and pay the association as a whole State Association, you will need more than a dollar, because your local secretary must have something to fall back upon. He has to have a room and he has a few expenses, of postal cards and stationery, and he must have a little margin. Of course I am anxious, as much so as anybody, to see the fee low, but I believe it will be well to consider the matter thoroughly before you decide to let it remain at one dollar. I would like to see it so you could give one journal to the member, but Mr. Williams seems to think it must be added to the fee in order to attract the members. I think the matter ought to be thoroughly discussed.

THE PRESIDENT.—In this connection I would like to say that we have an appropriation from the State, setting aside a certain amount of money for a certain purpose. It cannot be used for anything else. Now, we had a little trouble in another society having a meeting, and we wanted to use part of that money to pay the expenses of that meeting, but the State would not permit it. The Governor would not permit it and he was right, because there was set aside so much for printing and so much for the report and so much for the stenographer. If we are going to do anything with State societies and field meets in this State,

we have got to have the money come out of the association, not out of the State fund.

Another thing that is coming is this: there is going to be a building built at the fair ground. The State Beekeepers' Association will have some expense connected with that, especially with the department of extracting honey. That cannot come out of the appropriation. There is one peculiar thing about our State appropriations. You make out what you want and you never can get it through in that form. It can't be done, because they recognize that all departments, and we are allotted so much as all other departments, regardless of what our business may be, and they will not recognize another association, even as a department of our association.

MR. KILDOW.—In regard to raising the fee to a dollar and a half and getting in new members, I know furnishing a bee journal to them is quite a drawing card, because lots of times we can get them for that when we couldn't get their dollars any other way, and I think it ought to be included so that when we ask them to join the State association we could also get them to take the bee journal as compulsory, because a beekeeper who doesn't read the bee journals is a back number generally, and they ought to go hand in hand. If he don't want the American Bee Journal, take some other. I am rather partial to our own State journal, although I wouldn't force it on anybody if they didn't want it.

MR. WILLIAMS.—Mr. Dadant, may I ask you a question?

MR. DADANT.—Yes, sir.

MR. WILLIAMS.—How many subscribers have you in the State of Illinois that do not belong to the State association?

MR. DADANT.—I would have to guess at it, but I should think about a thousand.

MR. WILLIAMS.—For the State of Illinois?

MR. DADANT.—Yes.

MR. WILLIAMS.—Just think, if we had that thousand members what we could do in the State association.

MR. KILDOW.—We need them too.

MR. WILLIAMS.—I mean the total subscription for Illinois.

MR. DADANT.—I think we have about a thousand subscribers, I don't know how many of those are members of the association.

MR. KILDOW.—I know it is quite a drawing card to offer them the bee journal at one price.

MR. DADANT.—The question that brought this on was the trouble with the association, which association Mr. Williams got up so nicely last year. He got up a big membership on the Illinois River; they joined and were glad to, but when it came to the subscriptions, seventy-five cents of that dollar had to go to the bee journals, and I understood if they would send a dollar that would make them a member of the association and give them the bee journal for a year. The retail price

is one dollar, and it is out of the question to sell it for less than seventy-five cents, and I am sure the same situation exists with the Gleanings. Twenty-five cents in both associations is too little. I don't think the secretary would want a law passed that will deprive the branch association or the central association of a fee of at least twenty-five cents. That is why a motion was made last year to make it a dollar and a half. It seems to me if a man cares at all for beekeeping news and gets a membership in two associations, local and State, with a report, and one of the magazines published in the United States in the bargain, that he ought to be willing to pay a dollar and a half. At the same time I don't want to pass on that, I am simply discussing it.

MR. WILLIAMS.—Mr. President, you have got me started and I don't know when to stop. Let us thresh that Illinois business out right now and quit it right here. The secretary up there made the mistake—I can say he made the mistake because he is not here—I told him to send it to the secretary of the State association. He didn't do that. He sent it to Mr. Dadant, I mean the American Bee Journal when I say Mr. Dadant. They had a right to do with it as they did, but it made a muss and now let us clean that muss up. The expense part of it is past, as far as I am concerned. I pocketed my part of it and the secretary did likewise, and it is a thing of the past, but on the point that Mr. Dadant just now raised, I think if we ever have any more meetings up there we probably will state that the fee will be a dollar and a quarter, then we will have the quarter for local expenses. We haven't solicited anybody for any money at all. We would simply keep track of what we had spent, and it is about equal between the secretary and myself, and so we said "We will count that a dead horse and let it go at that." But if I could see this one thousand people that have subscribed for the American Bee Journal in this State, members of the State association, then I know that we could get the Legislature to do something. There would be a thousand people scattered all over this State, that wanted to see the bee business in the State on a basis where Mr. Kildow's would be brought, and where we would all be brought, on a business basis. A gentleman who was talking to me this morning—and he is here now—told me he had American foul brood in two of his apiaries, because there was a fellow in between the two that had old box hives that had the American foul brood. He thinks it came from there.

In my short experience with bees I know I have lost five hundred dollars from American foul brood; first because I didn't know I had it, and second because I didn't know how to take care of it, and third by probable neglect, but I have got it pretty near controlled, I think, and I believe if I had every one of these thousand people behind me we could get the State to pass an appropriation, enough to pay Mr. Kildow, if he wanted it, a salary that would pay him to go out all over the State and educate the people. That is what we need.

MR. DADANT.—What are your conclusions in regard to the fee?

MR. WILLIAMS.—I wouldn't want to raise it from one dollar for just one association, but if you are going to take in two, let them pay it. I wouldn't say make a membership for two associations for a dollar—split the difference, make it a dollar and a quarter. I don't think you will get as many members, you might.

SECRETARY STONE.—Mr. Chairman, Mr. Williams spoke of their fee being a dollar and a quarter. That wouldn't make you a member of our association, if we change our fee.

MR. WILLIAMS.—Therefore I am not in favor of changing it.

MR. STONE.—Some other gentleman spoke about making it a dollar and a half and including the American Bee Journal. The motion that I made to amend the motion that had been made, you can put it a dollar and a half if you want to, and it would include the American Bee Journal or Gleanings. Some might want one and some might want the other. Some around Chicago might take both, because they are in the Chicago-Northwestern and also in this one. But if you accept my proposition, the executive committee can say, the fee shall be a dollar and a half, which includes the American Bee Journal or Gleanings, and two dollars if you want them both. Put it that way if you want, but leave the by-laws a dollar, and if he doesn't want any paper it will be a dollar. We only had one man of that kind, though, last year. Sometimes we have four or five.

MR. STEWART.—Any man that won't pay for his own bee journal doesn't amount to a "darn," anyway, as a beekeeper.

THE PRESIDENT.—There might be a little truth in that. Now, the motion before us is the one that laid over for a year, that the fee be raised to a dollar and ahalf. Mr. Stone moved to amend it, that it remain as a dollar, but there was no second to his motion, so if there is no further discussion we will vote on the one to a dollar and a half, and if you do not want to raise it to one dollar and a half, vote against it.

MR. BENDER.—Mr. President, I think we ought to remember that increased prices do not always mean increased profits. We may lose enough members to more than offset the gain in fees. I think about the only thing is to let each member vote for himself.

THE PRESIDENT.—The question we will vote on is the resolution that was laid over a year ago: shall we raise the fees to a dollar and a half?

VOICES.—No.

THE PRESIDENT.—That means amend the by-laws to make it a dollar and a half. All in favor of the resolution raising the fees to one dollar and a half will please stand. Count them, Mr. Secretary.

SECRETARY STONE.—Eleven.

THE PRESIDENT.—Those not in favor of the resolution, stand.

(Mr. Williams and Mr. Stone voted no.)

MR. KILDOW.—Mr. President, this is all done, but why not change the constitution if we can better it?

MR. STONE.—Mr. President, I don't see any use of changing anything when you can make it better without changing it.

MR. DADANT.—Mr. Chairman, I just want to ask a question. Is that expected to include one of the magazines?

THE PRESIDENT.—That includes some one of the magazines published in the United States.

MR. DADANT.—That is what I wanted to make clear.

THE PRESIDENT.—It does not mean the journal, or Gleanings, or the Domestic Beekeeper. It means whatever the man may wish.

MR. KILDOW.—We have only made arrangements to furnish two.

SECRETARY STONE.—Mr. President, that leaves it just one dollar and a half, and when we send out these circulars I spoke of, that is all there is to it. If they want another bee journal, they can send off and get it.

THE PRESIDENT.—The executive committee can start making arrangements. The thing is to have the man take a bee journal whether he wants it or not.

SECRETARY STONE.—That is all right. I am with the majority.

THE PRESIDENT.—Are there any questions in the question box?

MR. BENDER.—There is just one so far. I am ready to receive questions.

MR. KILDOW.—Let us have a recess for a few minutes and give them a chance to collect the questions.

THE PRESIDENT.—You will take a recess for a few minutes, and pay your dues.

(Whereupon a recess of ten minutes was taken.)

THE PRESIDENT.—Let us come to order. Mr. Bender, will you read the first question?

MR. BENDER.—Question: How can we increase the attendance at the Illinois meeting?

THE PRESIDENT.—The question is, how can we increase the attendance at the Illinois State Beekeepers' Meeting?

MR. DADANT.—I asked that question, and my reason for asking it is that our attendance is always smaller than that of the neighboring states except Indiana, perhaps, but in Iowa, Wisconsin, and Minnesota they have a larger attendance than we have, and yet Illinois is certainly a good State for bees, so it seems to me there ought to be some way of increasing the attendance. We have a good many members, four hundred and sixty I understand from the report. One-half of that number, one-fourth, or even one-fifth (eighty) would make a very nice attendance, but we have twenty-four here just now. We probably will get up to thirty, and that will be the limit. It seems to me there ought to be

some active steps taken to wake up interest in the State association. I believe it can be done.

SECRETARY STONE.—Mr. President, I believe I can explain that better than anybody (laughter). There are not three states in the United States, I believe, that publish their annual report. The members will say, "I do not need to go to the meeting when I get it all in the annual report. I will just send in my fee." You have got to stop publishing your proceedings if you get them to the meeting.

MRS. KING.—Mr. President, I am not a member, but I can get a great deal more out of being here than I can by merely reading the report.

MR. STEWART.—You can get them here by making honey production more profitable, then they will come.

THE PRESIDENT.—Possibly reading the report has something to do with it, but the greater number of beekeepers in the State of Illinois are in the northern part of the State. It is a little hard for them to get here. Personally, I believe if this meeting was held in the neighborhood of Peoria we would probably have a greater attendance. I have felt so for some time, but it is like some of our by-laws, our charter states the annual meeting must be held in Springfield, and possibly it might be all right to hold a meeting here to elect the officers and have their papers read somewhere else at another time. I think we would create greater enthusiasm. We haven't as many here as we had at the Illinois River Valley Association meeting in Pekin. They held it at the court house and the room was full.

MR. KING.—I have talked to some and asked them to come. They think because it is at the Leland Hotel they have got to stay there all the time. That seems to be the drawback.

THE PRESIDENT.—I don't believe that keeps them away, because we held it at the State House and the attendance was not as large as it should have been.

MR. STONE.—It is on the European plan, they don't have to eat here.

MRS. WITHROW.—If you would serve refreshments I think you would have a bigger crowd. (Laughter.)

MR. TYLER.—I think that suggestion is good, because we had a little meeting at my place the third of June, and I told them—I guess it was in some of the bee journals—everybody come and bring your basket and enjoy a good time. It was under the auspices of the Home Bureau and bees were to be the subject, that is the way it was announced, and while it was almost impossible to get around with a car early in the morning, by noon it cleared aff and over one hundred came and brought their dinners, and we had a nice time, although Brother Baxter didn't get there.

THE PRESIDENT.—No, I didn't, on account of being busy with some work in the service at that time. Is there any other question?

REVEREND MORPHIS.—I have been a member of the Poultry Association in every county where I have lived, for a good many years, and they have been holding the State meeting always at Springfield, and they didn't have it in the Leland Hotel or in the State House, they have it in the Coliseum, and the most poorly attended meeting of the whole State is the State Poultry Association. All the county associations have greater attendances than the State meeting, so they concluded it was Springfield, and they moved it around, then, for awhile, but it seemed that there was no town that would affect it. This State meeting was in the hands of a few men and these local meetings supplied the wants of those interested in the poultry business. Of course, I don't know anything about bees, only to keep away from them (laughter), look out for them, but I have been greatly interested in the last few months in reading on the subject that you are here to discuss. I have become enthusiastic, in my reading, concerning the life of the bee and the work of the bee, and, honestly, I have come to admire the men who are engaged in this business. I think we would have lost out altogether, and that there would have been no such thing as honey—except as some fellow would happen to say it in words, you know, talking to somebody else—but, as a matter of fact, the sweetness that God has put here in the world would have been gone if it had not been for these men who take an interest in the life of the bee and try to understand its nature, and undertake to take care of it. When Mr. Stone asked me to come to this meeting, I didn't know of course that I was interested at all, but I was glad of the opportunity and the privilege, and I am glad to be here. While we know that numbers lend enthusiasm, we also know that that is about all it does lend. A few men have got to attend to this business, a few people keep bees alive, and a few persons have got to furnish all the honey in the world, and the thing to do is to stick to their job, whether it is Springfield, Peoria, Chicago, or wherever it may be, but I do not believe in moving around very much, and I make that statement based on my own experience in the poultry business.

MR. WILLIAMS.—Mr. Chairman, I have thought for several years for the industry at large the thing to do would be to hold some meetings similar to what we have been holding up there, directed by the State association. Now, you said a while ago in your talk that there wasn't any money available that you could use for those things. It ought to be fixed so we could have some money, so we could send a man out in some part of the State this month. Let it be advertised locally. You would be surprised to see how much you can do with the local newspapers. You can do more good in that way than through all these notices that you send out to these members. Every member here is watching for the notice in the bee journal, and when the association meets he wants

to attend, but we want to reach the fellow that doesn't get these things, it is on him that our ultimate success depends, so I believe it would be a good plan to hold six or seven of those meetings, or ten or twenty of them in a year, in different parts of the State, under the auspices of the State association. May I ask a question?

THE PRESIDENT.—Yes.

MR. WILLIAMS.—How many here received a letter from one of the regents of the Illinois State University this year, any of you?

THE PRESIDENT.—Anything regarding the establishing of the bee industry?

MR. WILLIAMS.—Yes.

THE PRESIDENT.—I did not.

MR. WILLIAMS.—I got a letter and was asked to reply to it. It was along the line of establishing a course over there, in bee culture. I think there is a move on foot at the University to establish instruction in bee culture.

THE PRESIDENT.—I am glad to hear that. Are there any more questions?

MR. BENDER.—Question: Can a virgin queen be introduced successfully to a laying worker colony?

MR. TYLER.—I can answer that. It is a proposition, but it can be done, and the way to do is to remove the old stand, put a new stand in its place, and if you have a frame or two of hatching brood, put them in this colony, the field bees will come to that. The laying worker will be in a hive off by herself and will soon not have any bees.

MR. KING.—It can be done by shaking the bees out quite a little distance from the hive, it seems as though a laying worker will not show up any more.

MR. BISHOP.—I have tried that now for the last three years, experimenting a little, and I find the only way I can have any success is to have some queens or be working in the yard when you know you have got a colony of that kind in the yard, and while working find a queen just emerging from the cell and take her to the hive that has got the laying worker, introduce a little smoke at the entrance and put the queen emerged from the cell, not yet five minutes old, put her at the entrance and let her crawl in. Give them a few puffs of smoke and go away and leave them alone. I get them to stick that way every time, but if the queen is an hour or two old I don't believe you can make it. But just after the queen emerges from the cell I have had excellent success, if I happen to have a colony of that kind in the yard, I take a new queen and run her in and hardly ever lose any, but if they are any age they won't accept them. That has been my experience. Whenever you are working with the cells you frequently find queens just emerging from the cell. Whenever you do and you happen to think you have a colony

of that kind in the yard, that is the time to go and attend to it. It is very easily done.

MR. STONE.—I have had them hatch out in my pocket while I was carrying them around, but that doesn't happen more than once in a lifetime.

MR. LOWRY.—I would like to ask Mr. King if he doesn't have to take those bees one hundred yards away from the old hive.

MR. KING.—Three feet. They crawl back, and it is all right.

MR. BENDER.—I think it is hardly ever good policy to introduce a virgin queen at all. A laying worker colony is composed of old bees, and by the time the queen gets mated and hatches out bees, there is no one to take care of them. If the colony happens to be strong, sometimes you can give them a laying queen, but I don't think it best to introduce a virgin queen.

MR. BISHOP.—I will admit myself it is not very good policy in a way, and it isn't a very good paying proposition to undertake to do those things, but if we didn't experiment a little we would always be in the dark. So it pays to experiment on those things a little and learn what we can, and of course we know little enough at best. It enlightens a person quite a bit more when they are handling them in that way.

MR. LOWRY.—I would like to ask what the objections would be to shaking them, as Mr. King suggested, and giving them a frame or two of a brood, and utilize what bees there are.

MR. KILDOW.—You won't have a weak colony, but one thing about it is they don't pay.

THE PRESIDENT.—Proceed with the next question.

MR. BENDER.—Question: Is there any difference in the amount of honey produced between a one-year old queen and a two-year old queen?

THE PRESIDENT.—Who cares to answer that?

MR. BENDER.—I really can't see among my bees that there is any difference, if the queens are both good. I would nearly as soon have the two-year queen as the one year, except that the one-year queen will last a year longer, but after they are two years old the queens begin to be a little doubtful.

MR. STEWART.—A queen is never better than the next year after hatched.

MR. DADANT.—The only difference I could see would be in the prolificness of the queen. I think the queen between her first and second year is more prolific, it is better established than during the first year of her existence, but when you speak of a year old or two years, if you mean after one year or after two years, I would probably select the after one year. I have heard people say we should change queens every year. We have never done it, and I do not believe in it. I believe our queens are just as good until they are two years old, as they are until they are one year old.

THE PRESIDENT.—Any other question?

MR. BENDER.—I have got one here if I can read it. It is dim.

MR. STONE.—Mr. President, I will tell you what it is. What is the dark substance that gathers at the bottom of the beeswax that you have extracted from the capping? It looks like chalk.

MR. DADANT.—A dark substance?

MR. STONE.—Yes, it looks like chalk.

MR. DADANT.—I believe I can explain that. Mr. Chesire used to believe that the capping of the cell was pure beeswax. Mr. Chesire gave in his book a cut, magnifying the cut capping, and he showed that there were sticks of wood—of course, they are not stovewood size, sticks of wood, and quite a few foreign matter that the bees appear to get into the cappings when they put them on, so that they are far from perfect, but I believe the chocolate colored matter is simply propolis, most of it is that color and if it is heavier than beeswax it goes to the bottom. We all know what we call travel stains on the combs is mainly propolis that the bees add to the cappings wherever they can fasten them to something. I believe that is what our secretary refers to.

MR. STONE.—They do not have the nature of propolis, they have no sticky substance.

MR. DADANT.—Mr. President, I will add something to that. Propolis can be perfectly dissolved into beeswax, although many people don't believe it. They believe it is all waste. I think there is a certain portion of propolis which will dissolve into beeswax, the part that is clear when it melts, but in the propolis there are substances which cannot make beeswax. Another thing our secretary says it is grainy. I want to warn every one of you that you will very often at the bottom of the cakes of beeswax find a grainy substance which some people say is pollen. In many cases it is pure beeswax which has been damaged by the rendering, that is, it has been heated by the steaming and made into a sort of dust, just like corn meal, and if a man overboils his wax, it will all be a foamy, whitish-grayish substance that doesn't stick together. We have received beeswax that was so much damaged that no one but an expert could tell that it was beeswax, and it contained water to such an extent that if you pressed the cake you pressed water out of it. That cake would remain on the shelf for a year before it would evaporate sufficiently so that you could not at some time press water out of it. Perhaps some of that is at the bottom of the case, and that of course would not be dark unless the wax was dark.

MRS. KILDOW.—With a certain amount of heat, will not beeswax granulate?

MR. DADANT.—No, not with heat. It isn't the heat, it is the steam that will do it. The hotter the wax is, the clearer it is.

THE PRESIDENT.—Have you any more questions?

MR. BENDER.—Some fellow wants to know what we use for straining extracted honey.

THE PRESIDENT.—What to use for a strainer?

MR. BENDER.—I suppose that is what he means. He says, "What do you use for straining extracted honey?"

THE PRESIDENT.—What do you use?

MR. BENDER.—I don't use anything. I never strain it at all, simply put it in the tank and let it settle, all the impurities come to the top and then I skim them off.

MR. KILDOW.—I use a double mosquito bar, let the honey settle and the sediment raise, and then I draw it off.

THE PRESIDENT.—Personally, I use the Alexander strainer. That is a strainer made like a pail, and I set it at the top of the can. I have two of them. If one of them becomes clogged I take that one out and put in the other.

A MEMBER.—Don't you find that a good deal of sediment goes through that strainer?

THE PRESIDENT.—No, I never skim the honey, and I never have anything to throw away.

MR. BISHOP.—I run this honey from the extractor through a copper wire netting about like fly netting, then in my settling tanks I have a frame made and I have about a half an inch mesh of galvanized netting which I fix in the shape of a basin, like that (indicating), which fits into a frame, then I spread a fine cheesecloth down into that netting, like that (illustrating), and then I pour the honey into that cloth and let it go through it and filter down below, and I do not touch that cloth. It catches everything and filters through with its own weight, then I do not have much in the settling tank to raise on the top of the honey, for it is usually pretty clear, but I am careful not to touch the cloth or open it to let any sedimentation through at all, and it will finally percolate through and the fine cloth will catch everything visible to the naked eye.

MR. STONE.—Do you heat it?

MR. BISHOP.—No, sir.

MR. STONE.—If honey is heated to a certain temperature it will not candy very readily.

THE PRESIDENT.—I have tried using the cloth, also I have tried having one can fit within the other, with a strainer. You fill the inner can, and by gravity it would rise in the outside can. A man in Wisconsin uses that method. But with our honey like we had this fall, it won't work fast enough. But I have never had any trouble with the Alexander honey pail.

A MEMBER.—How large was the inner can that you used?

THE PRESIDENT.—The big can was forty-eight inches across and the other can was two feet.

MR. WITHROW.—Mr. President, when I was in the Fair Ground I used an Alexander strainer. That is all right on a small scale, but it does not work fast enough to suit me. They get clogged up out there every day. I like the cheesecloth, for when it clogs up you can take it off and put on another, and you can boil it out and use the honey water for feeding.

THE PRESIDENT.—The only criticism I might have had of your extracting out there was the fact that you had more broken pieces of comb and capping in your extractor than I did, consequently your Alexander strainer clogged up quicker.

MR. STONE.—You cut deeper in taking the cappings off.

MR. BENDER.—I would like to know about what the average per cent of loss of colonies is that are wintered outdoors in this part of the State.

MR. KILDOW.—It is pretty hard to tell.

MR. BENDER.—I want the average, as near as you can give it. I will change the question a little. Supposing each one of you had one hundred colonies to winter outdoors, how many would you expect to have in the spring, what would you expect as the average loss out of that one hundred colonies?

MR. BISHOP.—Mr. President, I winter most of my bees out of doors, and that is a pretty hard proposition to get at. In a good many years since I have kept bees I have wintered one hundred colonies out of doors, then I have lost as much as 40 per cent. Weather conditions control the bigger part of it. When you once get them ready to winter in pretty good shape, weather conditions control it very largely. I have lost as high as 40 per cent in some years, and on the other hand I have gone through the winter several times 100 per cent and at other times with maybe 1 to 3 or 5 per cent loss. It is variable.

MR. WILLIAMS.—To help answer that question, I saw a farmers' bulletin, issued by Dr. Phillips, I think he was the author, right along this line Mr. Bender has talked on. Some farmers would come in and say, "I didn't lose a colony of bees. I wintered 100 per cent." He says that isn't the question. It is not a question of how many colonies of bees you wintered, but how many bees you had in the colony in the spring. You may have lost 50 per cent of your bees and don't know it. I think it is not the number, but the condition they are in when you get through, that counts.

MR. STONE.—I can testify to that. Last year my bees went through, only losing about 1 per cent, but when summer came, I had lost about 20 per cent. They went through the winter, but they were too light.

MR. KILDOW.—This next spring you may have a different song to sing.

THE PRESIDENT.—Has anyone else anything to add to this question? If not, we will adjourn for dinner. We will adjourn to meet at half-past one promptly.

Whereupon the meeting was adjourned to meet at 1:30 p. m.

TUESDAY AFTERNOON SESSION.

THE PRESIDENT.—Gentlemen, will you come to order? We would be pleased to hear the report of the State Inspector of Apiaries, Mr. A. L. Kildow.

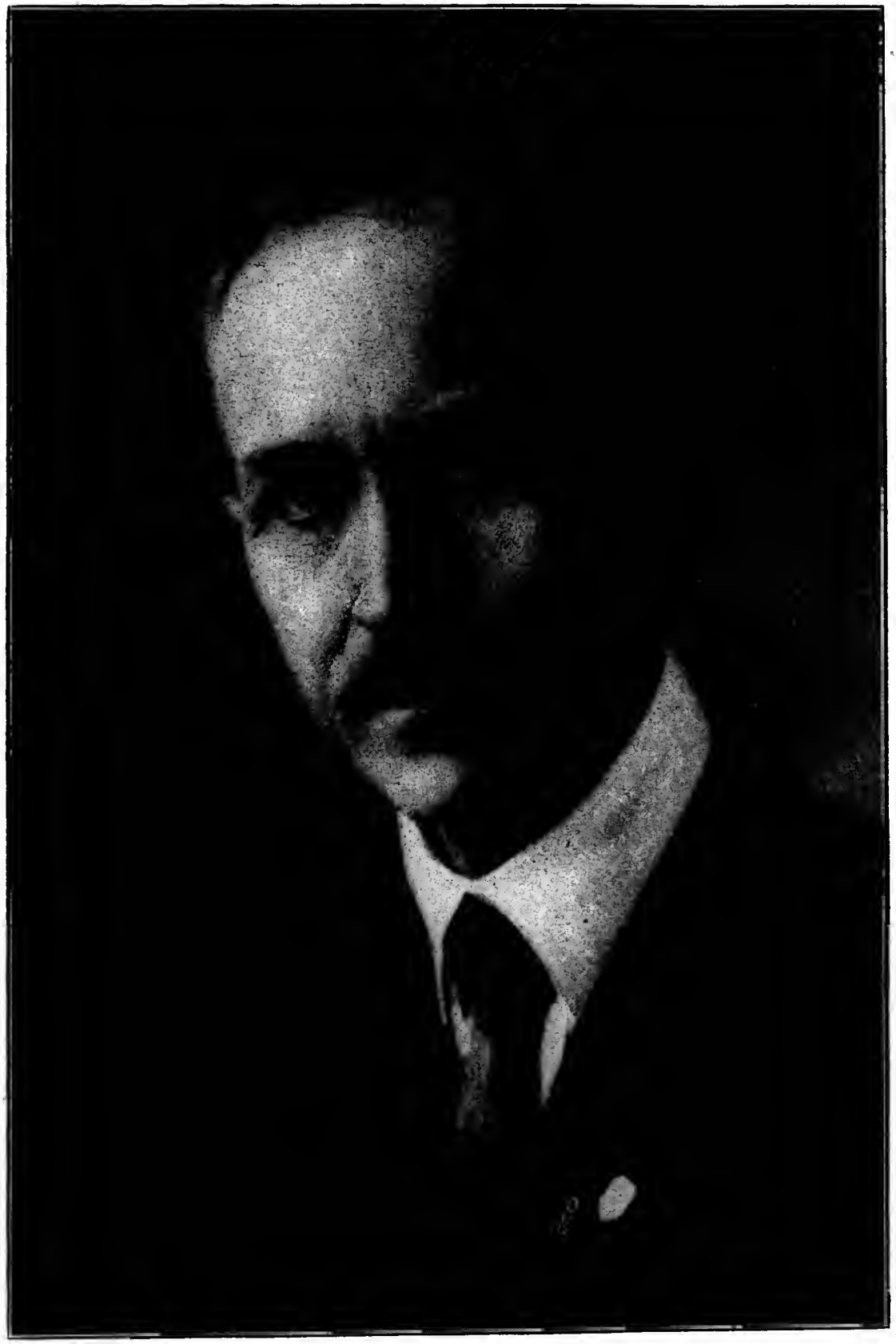
MR. KILDOW.—That will be rather short. I am going to answer questions afterward. I will give you a little outline of it, give the financial part and let it go. We shall all get it in the report of the meeting. You all know that last year was a rather bad time for our inspection work, on account of the high cost of everything else and the little money that we had to do with. Our expenses ran up, but our appropriation didn't increase a particle, so that handicapped us in getting around and doing what we wanted to do, but in spite of it all we did the best we could and got over quite a little ground, inspecting quite a good many bees. I found, in going over the State last spring, that the bees came out in very good shape, probably the best they have for several years, but you may all know that for some reason or other our clover didn't yield, and finally before the clover did take a start the atmospheric conditions were altogether wrong, and there were quite a number of bees throughout the State died of starvation. On account of not having deputies, it was rather slow work, because we couldn't get a deputy to go out for the amount of money the State allowed. The common day laborer with a shovel or nothing at all to work with could get as much or more money than the State allowed us per diem. Of course, the expenses were paid, but otherwise I couldn't get them, and I only had about three deputies that I could rely upon to do anything at all, so I am going to give you just a little resume of what has been done.

In submitting this report I wish to make mention of conditions as I have found them.

In starting this spring we were handicapped by the general wage being higher than the law allowed us, making it hard to secure the deputies to work, yet we succeeded in examining 1,037 more colonies than in 1918 but fell short 34 apiaries.

Last year 195 apiaries were found to be diseased, this year 127 were found diseased, showing a marked decrease in number of diseased apiaries.

Taking the State as a whole about half a crop of honey was secured. The clover belt of the State had bloom enough but weather



A. L. KILDOW,

State Inspector of Apiaries.

Date.	Number colonies.	Number apiaries visited.	Number apiaries diseased.	Number having A. F. B.	Number having E. F. B.	Number days.	Expense.	Office supplies.	Per diem.	Remarks.
1918.										
December						2	$ 11 54		$ 8 00	By inspector.
State Beekeepers' Convention.										
1919.										
February						4	10 20	2 00	16 00	By inspector.
Illinois Valley Bee-Keepers' Convention.										
Chicago Northwestern Bee-Keepers' Convention.										
April	20	1	1	1		7	18 27	2 87	28 00	By inspector.
April	260	11			1	3	5 56		12 00	By deputies.
May	335	15				14	27 70	2 30	56 00	By inspector.
May	1,860	109	20	10	10	23	38 48		92 00	By deputies.
June	1,637	20	5	3	2	12	21 12	2 00	48 00	By inspector.
June	2,089	123	42	16	26	58	103 02		232 00	By deputies.
July	718	17	6	4	2	21	44 72		84 00	By inspector.
July	1,728	158	35	14	21	46	88 23		184 00	By deputies.
August	45	5	3		3	14	21 98	1 00	56 00	By inspector.
State Fair Work.										
August	1,728	48	6	3	3	25	43 08		100 00	By deputies.
September	331	21	5	4	1	13	35 32	1 00	52 00	By inspector.
September	633	15	1	1		10	14 66		40 00	By deputies.
October	104	6	2	2		10	23 11	1 00	40 00	By inspector.
Total	10,488	549	127	58	69	262	506 99	12 17	1,218 00	

conditions seemed to be unfavorable; as bees in general were in good condition to store honey.

The late summer rains put the fall flowers in condition so that practically all colonies have an abundance of stores and bees for winter. The late warm rains have brought on a good growth of clover and unless some unforseen thing should injure the clover next year Illinois should have a bumper crop.

In regard to field meets. It seems to be impossible to get the beekeepers to attend. All seem to be afraid it will cost them something; or that they will have something to do.

Only two meetings were held this year. One at San Jose and Rockford.

About 200 diseased combs were destroyed for one man that was unable to care for them.

I succeeded in examining 10,488 colonies, and we found about sixty-four apiaries less than we found last year, diseased. Our expense was almost identical with last year, with the exception of, I think, about fourteen dollars. We find by going over the State, that the diseased bees seem to be diminishing to a very noticeable extent, and while we find some new localities that are diesased, yet the old ones are cleaning up to a very fair extent. Of course, as we talk with parties, give them literature, they are able to take care of themselves, that is, when they find disease appearing they clean up and we do not hear anything more from them, so I think on the whole that we are getting along very well with the money we have got to expend, because we have not got enough to keep a man out on the road or do anything, we merely have enough money to exist, to keep this thing up. We ought to have enough to put a man in the field and give him wages enough so that he can work at the job. So I would rather you would ask me questions as to what is in your mind, that you want to hear.

THE PRESIDENT.—Has anyone any questions to ask Mr. Kildow? Don't be a bit backward about asking.

MR. KILDOW.—No, for whatever is in your mind, that is the thing we want to talk about.

MR. STONE.—What part of the State, Mr. Kildow, is most affected yet?

MR. KILDOW.—It is pretty hard to tell just exactly. Of course, we find more disease in the north half of the State because there is where the big hulk of the bees are, and that is where we find most disease.

MR. WILLIAMS.—Have you a table of the counties in which you found it?

MR. KILDOW.—Not in my report. Along through Morgan County, in the center of the State and in that section appears to be most of the European foul brood, and I think that is due to the fact that the beekeepers there are more or less farmer beekeepers, keeping only a few

colonies of dark bees, and the European foul brood seems to hang in that locality.

THE PRESIDENT.—Would you say that foul brood is on the increase or on the decrease?

MR. KILDOW.—It is on the decrease from what we have seen.

THE PRESIDENT.—Have you gone over the territory that you have inspected, the second or the third time.

MR. KILDOW.—Many of the places we have gone over the second time, and some places we have gone over even the third time.

MR. DADANT.—Who are the deputies that have done work?

MR. KILDOW.—Mr. Heinzel, and Mr. Bender is on the east side, and a Chicago deputy, and that is practically all the deputies I had to work with last year.

THE PRESIDENT.—What was the name of the Chicago man?

MR. KILDOW.—Mr. E. W. Finch, of Chicago.

THE PRESIDENT.—Couldn't you have more deputies, were they not certified to you?

MR. KILDOW.—They were certified, but I couldn't get them together.

THE PRESIDENT.—On account of the salary?

MR. KILDOW.—On account of the pay. They can get more money by staying at home, you know. I used, I think, forty dollars of my expense money last year, and I had to be careful not to run over that, because they gave me strict orders not to run over my allotment for that certain thing. I used as much as I dared, and when I got all the reports in I only had about forty-seven dollars to go on. I had plenty per diem funds, but I couldn't use that. The two funds must be kept separate and distinct.

THE PRESIDENT.—He had a certain amount of money for per diem and a certain amount for expenses, and the expense money was eaten up before the per diem. It was all right at one time, when the cost of living was much less, and with the old railroad fares, it was about equally balanced then, but now it is not.

MR. STONE.—Won't they allow you, at the end of the year when one fund is not exhausted, to take out of that for the other? They allowed us to do it.

MR. KILDOW.—No, we are not allowed to do that.

THE PRESIDENT.—They allowed us to do it only after a considerable amount of juggling.

MR. GILL.—Is it possible to get any increase in the appropriation?

MR. KILDOW.—Not until the next Legislature meets.

MR. GILL.—Next year?

THE PRESIDENT.—Two years. The appropriation for the inspection of the apiaries comes under the Department of Agriculture. They ask

for that appropriation in their budget and of course the thing for us to do is to bear down pretty hard on the Director of the Department of Agriculture, Mr. Adkins.

MR. LOWRY.—I would like to ask if wild bees are not a prolific source of foul brood?

MR. KILDOW.—No, I don't think there is as much danger from wild bees as there is among the wild men that have the bees. If we had nothing more to contend with than wild bees and timber, we would be all right.

MR. LOWRY.—Aren't they generally the black bees, where the foul brood is found?

MR. KILDOW.—Certainly, but not altogether. Our trouble comes all from the shiftlessness of the man.

MR. LOWRY.—Has your experience been that in the southern part of the State there are fewer good beekeepers?

MR. KILDOW.—Yes, because in the part of the State there are not many beekeepers doing business on a commercial basis, that is in the south half of the State.

MR. LOWRY.—There are a great many wild bees there, that is the reason I asked that question.

MR. DADANT.—I might make a remark in regard to wild beekeepers that may not be very wild in disposition, but they are careless. I was deputy inspector only once, and as such deputy inspector I was requested by Mr. Kildow to go down in Perry County, where I found an apiary of eight colonies. I met the owner and talked to him, and we became very friendly. He had eight colonies, and the hives were so rotten that I wondered how the frames stood, because the hives fell apart whenever I touched the bottom of the box, the wood yielded. It was held together by propolis. I made sure that they looked thrifty and healthy, but I didn't open them very much, because I couldn't put them together again. That is an instance of what one has to meet in inspection work.

THE PRESIDENT.—Mr. Bender, have you anything to say? You are one of the deputies.

MR. BENDER.—I might tell you about a fellow down south here, of Mattoon. Mr. Kildow sent me down there on purpose to see that man. He said he had disease among his bees, but everything was clean when he wrote the letter. He did not have any neighbors very close, that had bees, but he wanted me to get out in the timber and hunt up the beetrees and cut them down and treat the bees in the woods, and I told him I would have to come back some time when I had more time. (Laughter.)

THE PRESIDENT.—The next on our program is a paper, by Mr. Frank Pellett, of Hamilton, Illinois, and I understand Mr. Dadant has his paper.

MR. DADANT.—Do you wish me to read it?
THE PRESIDENT.—Yes, I wish you to read it.

BEES AND GRAPES.

(By Frank C. Pellett.)

Of the disagreements between fruit growers and beekeepers, probably those growing out of the tendency of the bees to suck the juice from cracked grapes have been most serious. Many unfortunate misunderstandings have resulted from such circumstances, though the injury was as great to the beekeeper as to the fruit grower in many cases.

This condition arises from a combination of circumstances which does not often occur in the average locality. In the first place, the bees do not seek the grapes where there is plenty of nectar in the field and besides they are unable to reach the juice unless the grape has first cracked open through unfavorable weather conditions or has been injured by birds, wasps or other agency. Grape growers, seeing the bees at work in the vineyards have often accused the bees of injury to the fruit. The fact of the matter is that the bee is unable to puncture a sound fruit and only sucks the juice from such fruits as have already been broken open and are already damaged.

Wet weather often causes ripening grapes to crack open to such an extent that they would be of little value, even though no insect touched them thereafter. In dry weather, also, birds sometimes pierce the skins, apparently in search of moisture from lack of an available water supply. Some authorities say that, at such times, a liberal supply of water in open vessels near the vineyard will stop the injury from the birds. The English sparrow is accused of injury to grapes to a larger extent than most birds.

GRAPE BERRY MOTH.

The grape berry moth infests a great many grapes in some localities. In fact, entomologists state that in some localities as high as 50 per cent of the crop is injured by this insect alone. The fact that the honeybee sucks the juice from the berries which have already been opened by wet weather, grape berry moths, or other causes, does not greatly injure the grape grower, for such fruit is of little value.

The writer has visited the raisin districts of southern California and discussed this condition with the raisin growers. The accompanying picture shows a bunch of raisin grapes that have been sucked dry by the bees. In that locality rains are very frequent when the raisins are being dried. They are spread out in thin layers in crates and the crates left in the sun or placed one above another in piles, till fully dry. Previous to the writer's visit there had been an unexpected rain and some raisins were allowed to get wet. As a result they cracked open

and there being, just then, no available nectar for the bees, they swarmed over the raisins and sucked them dry as shown in the picture. The grower admitted, however, that the raisins had been so badly damaged by the rain as to be of little value.

FRUIT JUICE INJURIOUS.

The thing which grape growers do not seem to understand, is that it is unfortunate, indeed, for the beekeeper in northern regions, whose bees fill their hives with this grape juice. In the north there are long periods during winter months when the bees are unable to leave the hive. Since the bee is only able to void her excrements while on the wing, there is a large accumulation of feces during such long confinement. If the bees have only the best white honey for food, the tax is severe at best.

Raisin grapes that have been sucked dry by the bees.

When they have fruit juice, honey-dew or other food containing a large amount of waste matter, the intestines become so distended that the bees die for lack of opportunity of a cleansing flight.

Grape growers will in many cases be surprised to learn that thousands of bees die from having filled their combs with fruit juice instead

of honey. Of course, the wide-awake beekeeper will remove this material from the hive and give them good honey or sugar syrup instead, if it is possible to do so. This, however, involves a large amount of labor and the gathering of the juice from the grapes instead of being an advantage to the beekeeper, is a serious inconvenience to him. In southern California, where there is no winter confinement, there is no particular injury to the bees, other than spoiling the grade of any honey with which it may happen to be mixed.

The late Charles Dadant, who was one of the most widely known beekeepers of the past generation, on one occasion had a difficulty with some growers who could not be made to understand that he was not getting rich at the expense of his neighbors, when his bees were attracted to their grapes. He decided that the only way to convince them that the interests of the beekeeper and the grape grower were mutual, was to grow th largest acreage of grapes in the neighborhood. This he proceeded to do, and after he became the largest grower of grapes in his community there was no longer any criticism, for they could readily see that he had too much at stake in his grapes to permit him to be prejudiced in favor of the bees.

That bees are valuable in securing the fertilization of the blossoms of some varieties of grapes, there is little question. In southern California, I heard the story of a case where there was a violent disagreement between the grape growers and beekeepers, the growers accusing the bees of destroying their crops. As a result an ordinance was passed requiring that no bees be kept within a certain distance of the vineyards. It was not many months after the bees had been moved away until the grape growers realized their mistake and asked for the repeal of the ordinance and in addition offered to pay the expenses of the beekeepers if they would come back. It was impossible to verify the truth of this story, but even if untrue, it illustrates very well the importance of the bees in securing a full set of fruit at the blooming period. Fortunately beekeepers and fruit growers are coming to a better understanding with a growing tendency to work out mutual problems together.

THE PRESIDENT.—The paper is now open for discussion.

MR. KILDOW.—I think it has become generally known to beekeepers that bees do not hurt grapes. Somebody outside will sometimes say that they do, but he doesn't know what he is talking about.

MR. DADANT.—There is a matter connected with this that perhaps some beekeepers did not think of, I think it has been mentioned at the meeting of this convention in former years. In the year mentioned, when my father had a difficulty with the grape growers, one of the grape growers took me to task personally and said he knew exactly how the bees went at it, that they always make two holes in the berry, one hole above the other. He and I went to the vineyard, and sure enough it was so, but I suggested it was the two points of the beak of the bird, and it

made him so angry he wouldn't talk to me for quite a while after. It was so plain. The holes were all on one side of the bush, and every berry had two holes about one-eighth of an inch apart. Evidently when the bird was tired of eating or perhaps thirsty, as stated in that paper, the bird—and I think quails are about as much to blame as any—would peck at a bush and spoil it all in perhaps thirty seconds.

MR. KILDOW.—He wasn't very well posted in regard to a bird's mouth.

THE PRESIDENT.—We have a gentleman with us today that possibly most of you know. He may be a stranger to a few, but the house he represents is no stranger to the average beekeeper, the A. I. Root Company. We have with us today Mr. Gill, who represents his house in Chicago. We will be pleased to hear from Mr. Gill.

MR. GILL.—I am not much on talking. I want to assure you, however, that I enjoy being here. I am often so busy that it seems impossible to run away to conventions, but I did find an opportunity to get away last week to go to Madison, and I enjoy being here today. We want to be helpful. If there is anything that we can do at any time to help beekeepers, we are always glad to do that. Thank you.

THE PRESIDENT.—I assure you, Mr. Gill, we appreciate having you here. We are quite familiar with the A. I. Root house, especially Ernest, who generally makes our conventions. We haven't had him with us for a couple of years. We are saving him for a future date. Have you any questions in the question box, Mr. Bender?

MR. BENDER.—Yes, I have one: Is there any law prohibiting the use of the frameless box hive or the old fashioned beegum?

MR. KILDOW.—Not in Illinois.

THE PRESIDENT.—There is no law in the State of Illinois prohibiting the keeping of bees in a box hive.

MR. BENDER.—Here is another question: Can a swarm with a virgin queen be put in with a swarm with a fertile queen, without killing the bees?

THE PRESIDENT.—Can you answer that, Mr. Dadant?

MR. DADANT.—I will say, like Dr. Miller, I don't know.

MR. STONE.—I think it would result in killing one of the queens, and loss of bees.

MR. KILDOW.—That would depend upon the condition of the honey flow, and several other things.

MR. STONE.—They will not keep both queens. They will swarm again or kill one of the queens.

MR. STEWART.—That can be done unfailingly. Put a queen excluding honey board over your surplus. Put your virgin queen above that. They will not hurt either one of them.

THE PRESIDENT.—Would you have an entrance for the virgin queen at the top?

MR. STEWART.—No, I would put it up air-tight, so she couldn't get out. I would put a surplus case on, put it on top of that.

THE PRESIDENT.—How long would you leave the virgin queen up there?

MR. STEWART.—Two or three days, till they go down.

MR. STONE.—Wouldn't the queen stay up?

MR. STEWART.—I don't care what becomes of the queen. I don't care anything about that at all. You can get the queen down if you will bore a three-quarters inch hole in your honey board, but most queens will go through a honey board if they want to; virgin queens and a good many of the fertile queens go through if they want to go through bad enough. You can put a swarm with a virgin queen in, and not lose any of the bees at all that way.

MR. DADANT.—On that subject I would like to ask a question. Is the virgin queen's thorax smaller than that of a fertilized queen?

MR. STEWART.—Get your scientific man to answer that.

MR. DADANT.—The thorax has to be smaller to enable them to go through. It is not the abdomen that keeps them from going through, it is the thorax.

MR. BENDER.—I have all kinds of experience with queen excluders, and my experience has been that we hardly ever had a queen go through one, unless it was an unusually small one, but I don't think a virgin queen will go in oftener than a fertile queen.

THE PRESIDENT.—If there is nothing further we will proceed with the next.

MR. GILL.—I would like to ask about box hives. Some states have a law prohibiting their use, I know Michigan has a law prohibiting anyone from keeping bees in box hives. I think such a law would be a good thing to supply dealers. I wonder if our interests would not be mutual on that, and if anything has been done or is being done, if it is possible to do anything about that so that Illinois would get the benefit of that law at some time in the future.

MR. BENDER.—There is one thing about it, the law says it shall be the duty of every man keeping bees in the State of Illinois, to keep them free from the disease known as foul brood, if they are in box hives.

MR. KILDOW.—Mr. President, we have worked a little on that line. When we find a beekeeper with an old box hive, we tell him we can't get in there to find out whether there is anything wrong or not, and that the best thing for him to do is to get them out to see if they are all right. The best thing for him to do is to get them in a movable comb, so we can keep track of them in that way. We have stretched our authority a little bit on that account. It has helped us, and we got along very well.

A MEMBER.—Have you had anyone transfer them?

MR. KILDOW.—Yes, several of them. You can't compel them to, but you can "pretty nearly."

MR. DADANT.—There are two questions to be considered there. It is not only the matter of forbidding people to keep box hives, compelling them to transfer them, but we must also, if we are going to do any good, compel them to have them in a movable frame hive and have the comb stretched in the frames. I would much rather examine a box hive colony or a gum with a loose bottom board than to examine a Langstroth hive in which the combs are built crossways in the frames. If you have to transfer, it is easier to transfer from a box hive than it is the other kind, and so it seems to me it is rather overdoing the thing to demand that there be no box hives. We ought rather to demand that the beekeeper become educated on the question of bees, then even if he has box hives he will make them in such a way that they can be investigated.

MR. KILDOW.—We try to show him the advantage it will be to have him in that kind of hives.

MR. DADANT.—What proportion of box hives is there, Mr. Kildow, throughout the State of Illinois, in your opinion?

MR. KILDOW.—Oh, a very small proportion.

MR. DADANT.—Ten per cent?

MR. KILDOW.—I don't believe it is that large.

MR. BENDER.—I don't believe it would be more than 3 per cent.

MR. KILDOW.—The southern half of the State has a little more than the northern part, but I don't believe it would be more than 10 per cent all told.

MR. FREY.—How do you inspect to find the ants in the bees? Do the ants bother the bees?

MR. KILDOW.—We do not inspect for ants; we find some, but that doesn't bother us.

MR. FREY.—Do you find anything that will kill the ants?

A MEMBER.—Bees will if you give them a chance.

MR. FREY.—Bees won't either, the only thing that will kill ants is Paris Green, put it on the ground around the hive and it will kill the ants.

THE PRESIDENT.—I have a paper here, from Professor F. Eric Millen, of Guelph, Canada. Mr. Millen could not be here, will someone read the paper? Mr. Williams, will you read it?

LEGISLATION FOR THE CONTROL AND ERADICATION OF FOUL BROOD.

(F. Eric Millen, Provincial Apiarist, O. A. C., Guelph, Ont.)

The question of the control and eradication of American and European foul brood is vital to beekeeping. So far as reports show, we must admit that in all the states of the Union where foul brood exists, it seems to be more prevalent today than it was a decade or more ago. This may be more apparent than real, because in the past few years

there has been a great deal more apiary inspection and beekeeping extension work carried on, both by the individual State authorities and the Federal Government, than was formerly the case. These increased efforts have been the means of educating thousands of beekeepers so that they are able themselves to recognize the symptoms of both foul broods. Undoubtedly in former years many colonies which died from the effects of foul brood, were thought to have died from natural causes. So that while one cannot be absolutely sure that foul brood is on the increase, yet apiary inspection figures go to show that in many localities there are few bees today where many were formerly kept, and that foul brood exists in localities formerly free from the disease. If then both American and European foul brood is on the increase and the figures seem to prove that this is the case, what is wrong? In the case of other serious animal diseases, there are well defined laws which once put into effect stamp out the outbreak soon after discovery.

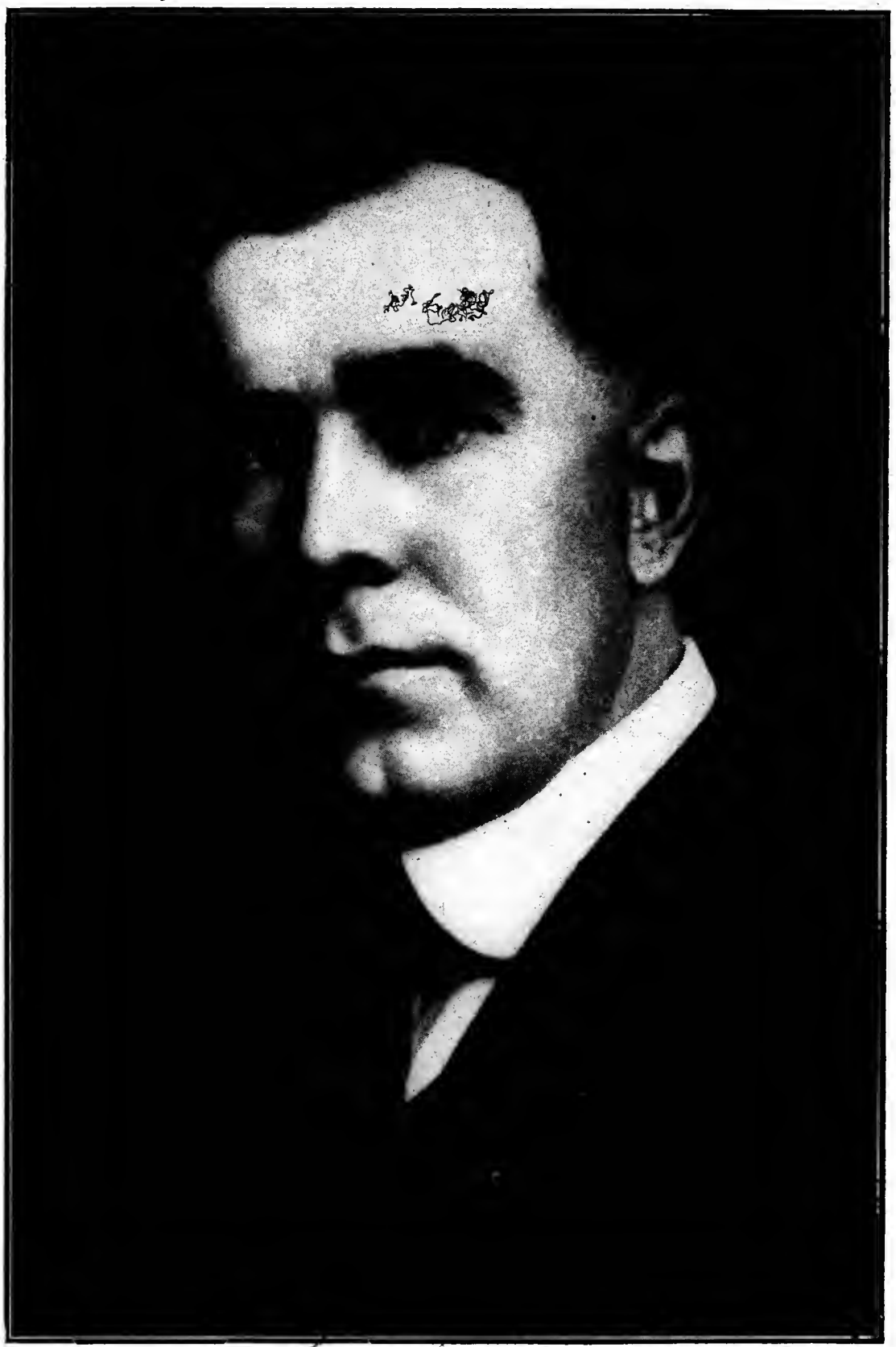
With beekeeping, we must admit that until the past few years, it was more or less a side line, a somewhat uncertain pursuit, and consequently did not receive the recognition due it from the government. This neglect on the part of State and Federal authorities, has allowed foul brood to become well established. Again, in the case of foul brood legislation there is no common law and action. Each state has its own law and its own method of carrying out the provisions of the law. The foul brood legislation of the past has been largely of the police type, where many threats were made and constructive measures left in the background. The tendency today seems to be swinging in the opposite direction, and some of the more recent foul brood legislation tends towards the broader educational line rather than the narrower and sterner methods.

Experienced apiary inspectors realize that there are certain measures necessary in all foul brood legislation if the act is to be of the utmost benefit and to accomplish its purpose.

A very important feature in connection with the execution of all legislation, is the cooperation of the people concerned. This is true of beekeepers and foul brood legislation, unless the beekeepers themselves cooperate with the apiary inspectors, little lasting good work will be done. The formation of live local and county beekeepers' associations in cooperation with the apiary inspector, will aid materially in the control and eradication of the foul broods from their territory. Unless the beekeepers in any locality are really concerned about foul brood and will cooperate, the inspector's services are a waste of time and money.

With the more serious diseases of the larger animals, the government not only specifies the treatment, but qualified men are sent to carry out that treatment.

The majority of beekeepers today do not understand the care and thoroughness necessary in treating a colony of bees for American foul



F. ERIC MILLEN,

Provincial Apiarist, O. A. C., Guelph, Ont.

brood, and I do not believe we shall make very much headway in the control of American foul brood, until all colonies found infected are also treated by experienced men, and the disease infected material thoroughly cared for by disinfection or destruction. I believe this method has been successfully tried by Dr. E. D. Ball in Wisconsin.

Together with the actual treating of disease infected colonies, there should be some measure in the law which will prohibit the importation of bees and used supplies into the State, or the movement of bees and used supplies inside the State, unless provided with a certificate from the office of the apiary inspector. There is nothing more disheartening to the inspector to find disease infected colonies or supplies moved into a territory which has been cleaned, or into a territory previously free from foul brood. It seems to be a waste of good money, unless a territory can be kept clean once the foul brood has been eradicated.

Unless there is a quarantine clause in the act, it is impossible to make headway in the control or eradication of the disease.

There is probably more American foul brood spread by robbing in the spring of the year than at any other time, or by other means. In this case, it is a physical impossibility for inspectors to visit every apiary where American foul brood exists, here is where the beekeepers in the county can help in a very material way. If the colonies which die or are much weakened by disease during the winter, can be so cared for that there is no robbing, then the control and final eradication of American foul brood is possible.

The present Iowa Foul Brood Law is good, so far as police powers are concerned. These powers are delegated to the county attorney. This makes it possible for the apiary inspector to go in as a friend and adviser rather than a police agent, and this aids in securing the best results. But I am convinced that the only way in which American foul brood will be eliminated is by means of the cooperation of the beekeepers in the county or affected area and then the aid of the apiary inspector and assistants in actually treating the disease infected colonies.

To my mind, a foul brood act today should contain the following clauses: (1) Power to inspect; (2) power to treat, with the beekeepers' aid; (3) police powers delegated to the county attorney; (4) quarantine measures for areas, counties or State; (5) no inspection unless aided by local or county beekeepers' association; (6) elimination of immovable frame hives.

An old saying and a true one says "The best way to help ourselves is to help each other." I believe this is very true of the control and final extermination of American foul brood.

Little has been said of European foul brood. In the northern states, all experience seems to show that the control of European foul brood is good beekeeping management.

The beekeepers of North America are really fortunate when it is considered that there is only one serious brood disease of bees, which causes actual destruction once it appears. Others can be so controlled that the loss is slight and the disease preventable by proper management. There are few other branches of livestock so free from serious disease. Let the beekeeper once get the true spirit of cooperation, then with sane foul brood legislation, American foul brood would become a rarity and beekeepers no longer dread its appearance.

THE PRESIDENT.—This paper is open for discussion.

MR. WILLIAMS.—There is one clause in there that I noticed particularly in reading the paper, and I noticed the Doctor looked up, too. It says, the way to prevent this is to help each other; the way to make a thing successful is to help each other. The old saying was, "Take thy book from off the shelf, God helps him who helps himself," so that the successful beekeepers have got to look out for themselves first, as well as the other fellow. I have been trying for about five years to help the other fellow get rid of foul brood. The question came up a little while ago about bee-trees. In Pekin I know of two trees that had bees in them, that have died. I do not know whether they died of foul brood or not, they may have. Four or five years ago that place was simply terrible. We have got about one hundred and ten or fifteen swarms there now, and I don't think there is more than a few cases of foul brood in them.

MR. KILDOW.—One thing, the paper speaks of diseased animals. That must not be compared with diseased bees; we can't get at the bees, you can't shut a bee up very well. He is a free agent, he goes where he pleases and we must use a little different process with him..

MR. WILLIAMS.—Suppose we had such a law as this in this State, that if a man that owned bees had to report to the State's attorney the fact that he had so many bees, in the spring of the year he would report to the State's attorney that he had lost so many bees throughout the winter from some cause or other, then there would be a chance for the inspector to go around there, then he wouldn't let his hives stand out there till they were robbed.

I think most of it is spread in the spring. We would be compelled to take it out of reach of the other bees, leave it stand for a month or six weeks, and you have infected the whole country.

MR. KILDOW.—If a man informs the State's attorney he has lost so many bees, it may be a month before he tells him, the harm has already been done. The longer it stands the more danger there will be. But the first few warm days of spring the colony sets out for honey, if it is diseased then, that is when the harm is done. This man may not inform the State's attorney for a month or six weeks after the colony has died, so he wouldn't help things any.

MR. WILLIAMS.—Maybe not.

MR. DADANT.—That is a very good suggestion. The only trouble is how to remedy this fact, that if a whole colony dies that has foul brood it will be robbed out. All others that have bees know that the first warm day after a colony has died any colony in the neighborhood will investigate, and if there is any honey will help itself, and in order to get the inspector to come and investigate that there would have to be an inspector in every neighborhood, and he would have to go every warm day. The beekeeper is the one who would have to take care of that, and I think we should discuss it, argue it and tell about it. I think meetings of this kind where a man's attention is called to it is really a valuable aid, because he can tell his neighbors, and I suppose most of you are experienced and already know that. I don't think there is nearly the danger in a lot of empty combs that there is in that first robbing of the honey, after the colony dies, because in spite of what Chesire said, that there was no disease in the honey, there is enough in the honey to transmit it, because the disease passes through the food of the bees into the larva cell, to feed the larva, and that is where it is reproduced. I don't think the danger of contagion in this case would be one-tenth what it would be if it was in the hive where the bees had died. I kept bees forty years before I saw any foul brood. In 1907 and 1908 we cured it, and we have made the biggest crops of honey we ever made, since that time, and I believe it is possible to go on and thrive, and make beekeeping successful while fighting foul brood, but we must keep our eyes open and take care of it.

MR. KILDOW.—This is a question, I think, that is most vital to all our beekeepers, this foul brood question. I was amused, about a month ago, at the Northern Illinois Convention. I dropped in there and in talking there with a man he asked me, do you believe that foul brood will ever be eradicated? And I answered him the short way, in my opinion, it never will be. That seemed to kind of warm him up, as a challenge. He thought that was nice coming from an inspector, that the American foul brood would never be cleaned up. I let him talk for a while and thought perhaps it would do him good. Then I told if he would use half as much enthusiasm in taking care of his own yard as he was showing up there, we would be all right as a class of beekeepers, but, I said, "I am afraid you will lag, when you get home you won't have half the pep you have here." That is the way with most beekeepers. We get people to our conventions, but when we go home we fall down. Our enthusiasm is gone. We cool off.

THE PRESIDENT.—I don't believe that foul brood will be entirely eradicated. It is like other diseases, diseases of the human race. Take smallpox for instance. Occasionally there is a sporadic epidemic of smallpox. Years and years ago everyone had smallpox. We read in history where the people stopped a carriage in the streets of London, because there were two people in the carriage, grown adults, whose

faces were not scarred with smallpox. The opposite is the case today, which shows the value of control and education, and I think the same thing holds in diseases of the animal world, and of plant life. It holds especially in beekeeping, simply by education. The average man that has bees and studied them is not a menace to the beekeeping world, but the man that has just a few colonies, that only cares for what little honey they produce to tickle his palate occasionally, never looks at the bees only when he wants to take a little honey, and that long after the harvest is over, he is generally the man that spreads diseases to beekeepers. Here in the city we are troubled with foul brood through the shipping in of honey. There may be no bees within many miles of us, that are diseased, but honey is shipped in from all parts of the country. It is against the law to ship honey that we know is diseased, but someone ships it in just the same, and I know in one case where I had American foul brood, where I am positive it came from cans of honey thrown in the alley. We will now have Mr. Bender's paper.

The Inspector's Part in the Control of Bee Diseases.

(By C. F. Bender, Newman, Illinois.)

It has been rather the fashion in the past, to blame the box hive man as the chief offender in the maintenance and spread of disease. In my own work as inspector I have not found this to be true. While the box hive often harbors disease, it is seldom spread until the colony dies and is robbed out. Even then the infection may only be carried to one colony. An apiary of box hives is often found healthy, or with only one or two cases, while the neighboring apiaries in frame hives are badly infected. The reason is, of course, not in any merit of the box hive, but in the fact that the bees are left undisturbed; while the enthusiastic amateur is constantly exchanging combs of honey or brood, uniting weak colonies, dividing strong ones for increase, extracting honey and feeding it back to other colonies, and last but by no means least, buying bees and queens.

We are often told in the literature that combless bees, and queens in cages, will not carry disease. With American foul brood this may be true, so far as I know; but with European foul brood, the queen alone, without attendants or food, will invariably carry the disease if introduced to a healthy colony. I do not know how long the infection remains in the queen. In my experiments, caging for five days did not make any appreciable difference.

While disease is assuredly carried from abroad by robbing, I believe that nine-tenths of the new cases come from colonies in the same apiary. Besides the ways already mentioned, probably the commonest carriers of germs are young bees that enter the wrong hive after taking a flight.

When we come to the treatment of existing disease, of course the

first thing is to prevent its further spread. For this work the State inspector is usually called; often that is all that is done. If the beekeepers of the locality work together it is possible to banish disease from a large territory, as I know from experience. Too often we encounter the human tendency to take a chance, and to blame the other fellow when things go wrong. It is a common thing for a beekeeper, after a halfhearted treatment of his bees, to blame the neighbors for all future cases, when the fact is that he has not followed instructions, and his bees have never been cured.

For instance, in one locality where I had visited in 1918, I was called back this summer. Smith, the first man visited, assured me that he had cleaned up perfectly last summer, but still had one or two cases of American foul brood, which he knew had come from Brown's apiary, half a mile away. What he wanted me for, he said, was to go over to Brown's and force him to comply with the law.

When I went to Brown, he admitted that he had one or two cases, but said that they had come from the Smith and Jones bees, which he told me, were fairly rotten. After staying to see Brown treat his two colonies I went over to Jones'. Jones thought his bees were healthy, but if there was any trouble it had come from the Smith and Brown apiaries. We found three infected, which were treated as usual. By a little detective work I discovered that all three of these men had saved a lot of combs from diseased hives that were treated last summer, and had used them to hive swarms on. They had been told to destroy all combs from treated hives, and said that they had done so.

In cases of this kind, where owners cannot be trusted to carry out instructions, the safest course is for the inspector to destroy the bees, and I think that the law should be changed so as to allow compensation for bees so destroyed, the same as for other livestock. Another weak point in the law is the fact that one may sell honey, even that extracted from infected combs, without asking permission, or making a statement as to its source.

The inspector's chief work consists in giving information to those who will receive it, not merely on matters relating to disease, but in all branches of the business; in a careful watch over the queen breeders and shippers of bees in his own State; in preventing as fas as possible the sale of diseased bees or their removal to a clean locality; and lastly, in the use of the big stick in cases of open defiance or wilful neglect of the law.

THE PRESIDENT.—The paper is open for discussion.

A MEMBER.—I don't think it needs much discussion. I think it is about the truth. (Applause.)

THE PRESIDENT.—You are about right.

MR. KILDOW.—One thing I don't think would work, and that is to give compensation. If a colony of bees are diseased they are not worth

anything. They are a detriment, and the owner ought to be made to pay for it, if there is anything done. There ought to be a law compelling him to pay for having that kind of colony, if there is any law about it. We would bankrupt the State of Illinois if we would allow compensation for diseased bees, because every fellow would have a few.

MR. DADANT.—In the matter of compensation, I believe I can tell you something that will interest you. The German Swiss—you know Switzerland is divided into three parts, German, French and Italian Switzerland—German Switzerland has an association of beekeepers with a membership of between seven and eight thousand, the exact figures I do not remember, but the point I want to make is that they pay one cent per colony insurance against disease. They have paid something like four thousand francs annually, in the last eight or nine years, and they have now thirty-four thousand francs of money over and above the commissions. They do not pay for the entire colony, they pay for the actual damage, it is paid to each man who has foul brood. It is judged by the inspectors, and each man who has losses gets damages, provided he is a member and has paid his one cent per colony. It is a mutual insurance, and they only allow them actual damages, they do not pay them for a hive that can be saved. They only pay them for the actual loss. They do not pay a very full amount, they pay a reasonable amount that makes a man feel better, and each man feels more certain, but it has the great advantage in that every man is interested in seeing that no man gets the disease, because it is paid for out of his pocket. When he does have disease among his bees, he gets indemnity. I am not suggesting that, but it is a good thing to think it over. We think we are the most progressive nation in the world, but I sometimes think the Swiss are ahead of us. When I was in Switzerland I visited the former editor of the National Bee Journal, who is now dead. He had a fine home on the shore of Lake Geneva, a Swiss chalet, in a beautiful location. As I went up to the room I was to occupy, I noticed that the stairway was stone, in a house of wood, and I asked him for the reason why. He said, that is the government order. I said, "What has the government to do with it?" "Well," he said, "the government insures our homes whether we will or not." He said, "You will notice that the man that doesn't have his house insured is the man who can't afford the loss, but in this country they compel us to build our houses a certain way and the stairways must be of stone, because the stairways are the only way in which the people upstairs can get downstairs, and stairways are also a carrier of fire." We are behind them in that, and I think we are in bees. They insure against disease, tornadoes and avalanches. Those are matters quite interesting to me, and I suppose they are to you, this matter of fire insurance does away with voluntary fires. A man gets paid for only a portion of what he loses. They do not allow him to build to suit himself, to put a stovepipe through his shingles, giving a

chance to catch fire without any difficulty, they make regulations that he must follow, then if he loses the thing is looked after.

MR. STEWART.—I have the same old question, but a different crowd this time. I have one hive of bees; I have all the combs I want and run for extracted honey. The hive does not swarm. I have another hive of bees. I don't have any combs at all, only frame foundations, I put those swarms in hives, and the first of August I will take all those swarms and put them in the parent hive. The honey flow is over. I will extract the honey, melt up the combs. Which one will give me the most money?

THE PRESIDENT.—Does anyone care to answer that?

MR. WILLIAMS.—I don't know whether I am going to answer it or not, but I will tell you something that actually happened. Last spring a year ago I sent to friend Dadant's firm for a colony of bees for a man in Pekin. He got the bees. That was last year, and this year I consider about equal in the production of honey. That colony did not swarm. He only used the sections and full sheets and foundation: last year he got one hundred sections. This year that colony swarmed, I helped to hive the swarm. They either had swarmed before or superceded the queen, because it was a young queen that I hived. That colony, if you would put it back on the parent colony, had 203 sections of honey, and you had the foundation and comb in the bottom besides, so I think by swarming they produced the most honey.

MR. STEWART.—The one that swarmed, the queen was to be clipped. When she swarmed I was to pinch her head. Then there would be three sections, there would be no brood to be taken care of at all.

MR. DADANT.—I want to protest against passing an opinion on one colony only, of bees. What might prove to be one way, in one single instance, one year, might prove the reverse next year, because the queen was different and conditions were different, because they were wintered in a different way, or because the crop was different, so I do not believe we should pass judgment on one colony of bees, or what happened to one colony when kept a certain way and another kept another way, or the same colony being kept another way another year.

MR. STEWART.—Take it the same year.

MR. DADANT.—There is too much chance for exceptions.

MR. STEWART.—Take them as near alike as you could get them.

THE PRESIDENT.—As I understand it the gentleman is asking a rather hypothetical question.

MR. STEWART.—Yes.

THE PRESIDENT.—For the purpose of debate.

MR. DADANT.—He has an answer to it.

MR. BENDER.—I would like to understand distinctly what the question is.

MR. STEWART.—One has all the comb it wants, and it doesn't swarm. The other doesn't have any comb, only frames when it started in. The first of August you put all the swarms on the parent hive, extract the honey and melt up the comb, which one will give you the most honey?

A MEMBER.—The one that swarms.

THE PRESIDENT.—Mr. Withrow, have you an opinion?

MR. WITHROW.—That is a very deep question. What would give you the most money one year might not give you the most money next.

THE PRESIDENT.—Of course this is a hypothetical question, and it is not necessary to compare year after year, because it would vary.

MR. WITHROW.—I believe the colony that swarmed would give you the most money, because you would have more wax and possibly some honey. You would have more labor, too.

THE PRESIDENT.—Let us hear your answer. They do not seem to care to debate it.

MR. STEWART.—Well, there won't be a queen get back in the hive, if I get my foot on her this summer.

THE PRESIDENT.—Which colony would you say?

MR. STEWART.—The one that swarms.

MR. DADANT.—That would return the swarm to the hive.

MR. STEWART.—To the parent hive, then they would swarm again.

THE PRESIDENT.—We will have the paper, now, of Mr. E. S. Miller, President of the Chicago-Northwestern Beekeepers' Association, "Modern Methods in Comb Honey Production."

MODERN METHODS IN COMB HONEY PRODUCTION.

(By E. S. Miller.)

There are many schemes for the production of comb honey, so many, in fact, that they become confusing. Many of the plans advocated are not practicable in the hands of the commercial producer. Others require too much labor and manipulation. Others still are successful only when applied to certain restricted localities. In this paper it is my desire to present a practical method, requiring a minimum of labor and applicable to commercial apiaries within the clover belt.

In order to secure a maximum yield certain conditions are essential:

1. There must be a strong force of bees at the proper time in order to gather whatever surplus is available.

2. The bees must be kept together in one hive. There must be no swarming or artificial division of colonies.

3. Brood rearing must be restricted during the honey flow.

In order to insure a strong force within the hive it is important that there be an abundance of food during the spring months, for, as shown by Geo. S. Demuth in a recent government bulletin, the bees which gather the crop are those which are reared in the six weeks preceding

the opening of the honey flow. In colonies allowed to run short of stores egg laying is retarded or ceases entirely, thus reducing the working population at the time when more bees means more honey.

Successful production of honey presupposes successful wintering, a queen not too old, a plentiful supply of stores with which to carry the colony through to the main flow without any cessation of egg laying. Colonies strong in early spring may consume their stores and at the beginning of the clover season be lacking in young bees. For this reason it is well to equalize colony strength by taking frames with adhering bees from such colonies and giving them to those of moderate strength, provided, of course, that disease is not prevalent. It is of prime importance to see that every colony is supplied with an abundance of stores during the spring months and especially from fruit bloom to clover.

A given number of bees in two hives may gather as much nectar as if in one hive but most of the honey is consumed by the brood or is placed elsewhere than in the sections. When natural swarming occurs two separate colonies result, in both of which there is a cessation of brood rearing. In the parent colony the young queen begins to lay about sixteen or eighteen days after the prime swarm issues. In the new colony there is a period of twenty-one days in which no young bees emerge. To restrict brood rearing during the honey flow and at the same time keep the colony force undivided is a problem that tests the skill of the apiarist. In general there are two modes of procedure, corresponding to the two processes in natural swarming. The first is to remove the queen previous to or about the time the bees make preparation for swarming, say in the first week of the clover flow, and to requeen ten days or two weeks later. A modification of this procedure would be to permit the bees to rear a queen from a single cell, or to give a ripe cell from superior stock after all brood is sealed and queen cells removed. One disadvantage of this plan is that a part of the honey will be stored in cells made vacant by emerging brood rather than in the sections. This corresponds to the parent colony when natural swarming occurs.

The other plan is to remove from the colony all of the brood, giving the bees an empty comb, some honey and full sheets of foundation. This corresponds to the new swarm in natural swarming. These two plans may be used coordinately in the same yard, the first being adopted to colonies to be requeened and the second to those containing young queens of superior stock, the extra brood being used to strengthen weaker stands. Usually the second or "shook swarm" method will be found preferable.

In some localities and some years there is a tendency of strong colonies to swarm about the time fruit blooms. To prevent this and to catch any surplus at this time, place upon the hive a queen excluder and

a second hive body. The outside frames of the second story should contain combs filled with honey kept over from last season. The middle one or two frames should contain empty drawn worker comb with which to start the bees working above. The remainder of the space should be filled with frames containing full sheets of wired foundation. This second story serves as a reservoir for any surplus at this time, relieves any congestion of bees in the brood chamber and insures against starvation in case of continued bad weather.

At the beginning of the clover flow, remove the lower story and place the second hive body upon the bottom board to become the new brood chamber. Remove *all* of the brood, shaking the bees in front of the new hive. The queen may be shaken off with the bees but a better way is to find her when taking out the brood combs and see that she enters the new hive. Do not make the mistake of leaving one frame of brood or any brood at all in the new hive, for if this is done queen cells often will be started and swarming may occur a few days later. It is important at this time to see that the new brood chamber contains neither too much nor too little honey. If no honey is left the bees may abscond or may starve in case of prolonged bad weather. I would advise that the two outside combs be combs filled or, at least, partly filled with honey. The middle comb should be empty in order to give the queen an opportunity at once to begin egg laying. The foundation is drawn out as needed for brood rearing, thus forcing the honey into the supers, two of which are added at the time the bees are shaken. The first super should contain a few bait sections. By giving these supers immediately the weight of bees is largely removed from the foundation below which might otherwise be caused to sag if the weather is warm. With this mode of treatment the brood removed can be used in building up nuclei or to strengthen weaker colonies. It may be asked why not use all drawn combs instead of foundation in the new hive? The difficulty is, that the honey will be deposited in these combs instead of the supers and in this way prevent egg laying and often will result in swarming later in the season if the flow is prolonged.

It will be seen that with the foregoing method of treatment there is, during the flow, a restriction of brood rearing, brood which, unless the flow is prolonged, does not and cannot assist in gathering the crop. Not only do the larvae consume immense quantities of food but they also, after the flow is over, become consumers rather than producers.

Now what are the advantages to be found in this system of management?

1. It follows closely the process of natural swarming.

2. It has been tried out by successful bee men and found to be practicable and effective.

3. It provides for a strong force of bees at the beginning of the clover flow.

4. It provides against starvation in case of unfavorable weather conditions.

5. It forces the honey into the supers at the time of clover, leaving the brood chamber to be filled with brood.

6. It keeps within the hive an undivided force of bees, effectually preventing swarming and thus may be used by commercial beemen in out-apiaries.

7. It reduces brood rearing at a time when an increase of bees would result in a decrease in the crop.

8. It requires a minimum amount of labor. In the first process there are two manipulations, namely: removing the queen and ten days later removing queen cells and requeening. In the second process, aside from adding and taking away supers there is but one handling, that of removing and disposing of the brood.

In some localities comb honey may be secured from heartsease, buckwheat, golden rod and other late blooming plants. If it is expected to produce comb honey from August or September flows one should see that every colony is built up strong with preferably a young queen and, if swarming is likely to occur in August, treat as in the clover flow. When there is no local market for dark or amber comb honey it usually is advisable to remove comb supers after the clover is done and to give each hive one or more supers of extracting frames above a queen excluder. A goodly number of these supers should be regular hive bodies containing combs or foundation to be drawn out and filled with honey to be kept over and used for feeding the following spring. Some of these combs may be needed in the fall to replace empty combs in light weight colonies. It beats buying sugar.

If there is no fall flow in your locality, better secure these combs of honey from your weaker colonies during the clover flow.

To get ready for a big crop next year, begin as soon as possible after the main honey flow closes, say in July or August. Get rid of every queenless colony if you haven't already done so, and every slow queen. See that all nuclei are built up and that every weak colony is made strong. Hives with old queens should be dequeened and the brood used in building up the others. Remember that one colony in good condition and properly cared for is worth more than three run on the "let alone" plan. You will, of course, see that every case of foul brood is properly taken care of. Resolve to keep all colonies strong, well fed, and in prime condition and next year harvest a bumper crop—if there is nectar.

The President.—This paper is open for discussion.

Mr. Bender.—There is very little to discuss in the paper. It is simply the standard plan for the production of comb honey. It is exactly what I have been doing for the last ten years, and I took it from Dr. Miller.

MR. STEWART.—The best point he made in that was made three times, have plenty of honey in the hive.

MR. WILLIAMS.—Mr. Chairman, but these brethren that are speaking must remember that what to them is not new may be to some other fellow new. We are not all old beekeepers, while we may be old in years, in the experience of keeping bees we may not be old, so we want to learn these things, and we come here with the idea of getting them from these fellows that have had the experience, and they may tell us over and over again, and we won't learn all there is about it. We have to be told and told, then we have to be told and told again, and after that we have to do and do before we become beekeepers.

THE PRESIDENT.—Have you anything to say on this subject, Mr. Coppin?

MR. COPPIN.—I don't know that I have anything particular to say on it. We have to have strong colonies of bees in order to produce comb honey, and in order to have strong colonies of bees we have to pay particular attention, for one thing, to see that they do not run short of stores, to see that they have clover. A number of bees are now kept in eight-frame hives, and there are great chances of a number of the bees running short of stores, and where one is not paying strict attention to his bees and does not know the conditions, they are liable to run short of stores, and at the time when clover is in bloom, when they should be in shape to gather it, there is an empty brood chamber, neither honey nor young bees, and the result will be that by the time they get in shape to put any honey in the sections the white clover honey is, the best of it, gone, and we get poor results; so that I think it is advisable for all of us to see that the bees do not run short of honey before the white clover comes.

With regard to the swarming situation, we all have our different ways of handling that. I usually hive the first swarm, if they insist on swarming, but there are very few swarms that I get. I furnish them plenty of room to work. If they do swarm, I allow them to swarm once, but no more.

MR. GILL.—Possibly you men and women would be interested in a manipulation I came across. Last summer or fall I visited a comb honey producer, I think, perhaps, one of the best in the state of Michigan. He took advantage of the early flow by putting on just a shallow super about three inches in depth to get the little honey that would be gathered at that time, and to put it in shape in order that he could use it for feeding some other time, and also to get the bees to working up. When the clover flow came he would put his super between and remove this and hold it to feed in the fall or later, and sometimes he would take advantage of a small fall flow in that way. Where there is no trouble with disease, it would seem to me to be an excellent plan for honey production.

MR. KILDOW.—I used to have a little trouble in the period between fruit bloom and clover. I accidentally stumbled on to a plan, and it was this: I put out about an acre of common black raspberries, and after that I had no trouble with my bees going light between fruit bloom and clover, because raspberries will bloom during that time.

MR. BENDER.—How many colonies did you keep?

MR. KILDOW.—At that time I kept about fifty stands of bees and they would get lots of honey from that acre of raspberries. But I have more bees now, and I run for extracted honey.

I think the custom of dequeening at the time of the honey flow is getting out of date, for the simple reason that nowadays the sweet clover comes in really before white clover is over, therefore I think the sweet clover coming in as it does, we need a force of bees all the way through the season. It used to be different in olden times when we didn't have sweet clover. Now the sweet clover coming in bloom about the twentieth of June, or before the white clover is done, then we need our full brood rearing to the end of the season in order to have strong colonies for our fall flow, whereas by the old way if we would stimulate our colonies for the fall flow, the fall flow would be over with before we got the bees, therefore I think that old idea of dequeening at the commencement of the honey flow is getting to be a thing of the past.

MR. STEWART.—After they collect so much, will the remaining bees gather honey as fast as they did before? Do the bees work as well?

MR. KILDOW.—I don't see but what they work just as well, there isn't so many of them.

MRS. KILDOW.—I am not a member of the association, but as they have asked us to criticise the inspectors, I am going to criticise just a little, and my criticism is this: I have been reporting the work for Mr. Kildow for some time, and there is one thing that I have found among the inspectors, they are slow. By that I mean that when we have instructions sent out to send in reports by the fifteenth, to have them in by the fifteenth, often it is the last of the month or the thirtieth before the report comes in. I say it is their business to follow the instructions to be prompt. Then you send them instructions again, and the instructions sent come from the State, and we have to follow out those instructions; you send them instructions that you want a report made a certain way. They have their hobby and they want to ride that hobby and make their report their way, because, that is all right, that is my way. I understand it, you may understand it, but you go down to the State House and talk to them and see if they will accept it, and unless the State accepts it, it is not going to be accepted, as long as I report the work. Now, if you will allow me to criticise a little further.

MR. STONE.—How about the State authorities being more than a month behind in sending me something?

MRS. KILDOW.—I can't criticise them, they are above me, but that is the end of the rope that pulls. Another thing, in the deputy work along this line, the State deputies are not explicit enough in their work. They will say they have inspected so and so, they have found no swarms diseased, and they give no remarks concerning that, as to what the result is, whether that man is capable of taking care of the situation, whether he needs more help, or what he has done. There is a place on the blank for remarks, and that is what is expected at the office. The main thing, as said in the first place, is that you are too slow.

MR. KILDOW.—I would like to have somebody tell us how we could get a field meet for the State. I have been unable to do it, and I would like to see them. It would be one of the best things we could get, but it appears to be almost impossible to get anybody to allow us to have a field meet in their yard, that would be representative, and I would like it very much if somebody would strike upon a plan whereby we could have these field meets. I intended to have a field meet at my place last year, but I am about one hundred yards out of town and I couldn't get the Red Cross or any of the neighbors to have dinner. I couldn't feed them alone, but I wanted to have a meeting there and under those circumstances it fell through with, situated as I was. We must have a lunch, and I could not get anyone to do it, for while the lunch would be paid for, no one wanted to undertake it. If we were close to a restaurant, they could go and get their lunch, but not where we are located.

MR. TYLER.—I had a little experience along that line. I am a little like Brother Dadant, whenever I know anything I like to tell it. (Laughter.) I took it upon myself to invite the home bureau of our county last spring. They were having their henhouse meetings, as they called it. They had a couple in their neighborhood, where they met in the henhouses at the neighbors places, and at that time their subject was chickens. I saw the advisor and extended the invitation to her to have her June meeting at my honey house. She fell to it, and I began to plan. I wasn't out very much money for advertising. Mr. Dadant I think gave a notice in the journal, and it became quite extensively advertised, but the weather was greatly against us. In fact, the morning of the third of June, the day we had set, was a very bad morning. I made the trains from three towns and back home each trip, and the roads were anything but pleasant, but by noon it cleared off and the conditions began to improve. The nature of the advertising was like this, and I think nearly anybody keeping bees in any locality can get out a crowd. They may not be all beekeepers, but they are interested. The notice was given to the meeting to be held at my place on June third, under the auspices of the home bureau; subject, "Bees." We also advertised, "Everybody come and bring your dinner." That does away with Mr. Kildow's difficulty of not having any way to feed them.

We had a nice crowd, as I think Mr. Williams will agree, as he was there, and they all brought their dinners and there were over a hundred ate dinner, in spite of the weather. Had there been a nice day, there would have been nearer a thousand at that meeting, because ever so many have expressed themselves since then, that they wanted to come and would have been there, had the weather permitted. For my part, if they want a place to hold a field meeting, you are welcome to my place. You can reach there from different directions, either from Harness or St. Joe, or anybody situated on the Illinois Central lines, if they will come to Emden I will have provisions made to bring them out. It is an out-of-the-way place, but it is one place which can be got, and I openly extend an invitation for a field meet at my place next summer, if you see fit to have it there all will be well. (Applause.)

MR. WILLIAMS.—Mr. Chairman, along the line of field meetings I want to say this: I attended the one that the brother has just referred to, in fact, I might say that we have had three. Our first meeting was at Pekin. You were there. The next meeting was at St. Joe, in his uncle's grove, and I don't think there was one at that meeting that regretted it, because we had one of the best addresses that day, that I have ever heard at any meeting. I was assured by the State Association that if we would have a meeting that we could have a speaker there, and his expenses would be provided for. I couldn't get a speaker, I depended on Dr. Baxter and when it came to a show-down he deserted me, and so when it comes to those field meetings in that neighborhood, I have got to do the work, and I think the people are tired of me, but I will say this: if you want a field meeting up in that locality and will furnish the speaker and pay the expenses he may be to—and it won't be much—we will have one. I think I can get a crowd there.

MR. BENDER.—Here is a man who wants to know who can give the best plan for extracted honey. I suppose that would be quite a long discussion.

THE PRESIDENT.—The best plan for extracting honey?

MR. BENDER.—That is what he said.

MR. WITHROW.—The best plan I know of is to have the honey first to extract, then a good extractor, capping melter and storage tank, and containers to put it in, and get all you can for it, thirty-five cents a pound if possible.

MR. COPPIN.—Someone that knows how to use the uncapping knife. (Laughter.)

THE PRESIDENT.—The best manner of producing extracted honey, not the best manner of removing it from the comb.

MR. WITHROW.—If the committee sanctions it I am ready to audit the books, and make a report, and have that off of our hands.

THE PRESIDENT.—It is now a quarter of four and that is all the program for the day. There is no evening session. If you have nothing

further to bring before the meeting you might as well have a recess till 9:00 o'clock tomorrow morning.

(After some discussion, a 10-minute recess was taken.)

THE PRESIDENT.—We will hear from the question box again.

MR. BENDER.—Question: What is the best way to winter bees between a latitude of 40 and 45 degrees?

THE PRESIDENT.—That is north of us. Forty is about Peoria. Is there anyone here that cares to answer that question?

MR. COPPIN.—According to the instruction we are getting from Washington, from our experimental station, the best method of wintering bees will be to pack them good and protect them. Their instructions include nearly all the United States, they all need protection, not only in the latitude you speak of, but all over the country, and I for one think that we ought to be governed by the instructions we get from the government, and protect our bees, pack them well. That is what I have done as nearly as I could follow their instructions.

THE PRESIDENT.—I believe their instructions said to winter out of doors with four inches of packing beneath the hive, eight inch around the hive and twelve inches on top, to pack before the first killing frost, that is the instructions from Washington.

MR. COPPIN.—Six inches around the hive.

THE PRESIDENT.—They say eight inches in that district. I looked it up last night, eight inches around, and twelve inches on top is the outdoor method for bees in that locality.

MR. BENDER.—I think the question of outdoor wintering is largely a question of stores. I think the cellar is decidedly the best. I have wintered 100 per cent of my colonies in good condition in the cellar. I think the easiest way by all means is to pack them in the cellar. There is no expense, your hives are kept dry, and, besides, you have saved several pounds of honey to the colony. Outwoors they will consume double what they will in the cellar, besides the expense of packing the bees. I have a common, ordinary, underground cellar made for the bees, but not especially packed. I have a stove in the cellar.

MR. STONE.—What temperature do you keep the cellar?

MR. BENDER.—Forty-five degrees as nearly as possible.

THE PRESIDENT.—What system of ventilation have you?

MR. BENDER.—I open the door and air the cellar nearly every morning, unless it is very cold. If it gets up to about 40 and 45 degrees I leave the cellar wide open all winter, giving them plenty of air and keeping them dry. I keep the temperature about 40 degrees. I may go a little shy if it gets below that, and the wintering is practically perfect. I have never lost a good colony in the cellar.

MR. COPPIN.—Mr. President, I have had an idea that the difference in wintering inside and outside, the difference in the amount of stores that bees consumed, was that the ones outside consumed more stores

and are farther advanced than those we take out of the cellar. Those we take out of the cellar are not so thrifty, those outside have a better start in brooding, so that the cellar bees would require more stores.

MR. BENDER.—They have a large amount of bees, though, that would have died if they had not been in the cellar. When the honey flow comes on I find the bees wintered in the cellar are better than those kept out, and store more honey. I keep a record of every colony I have. I know whether it was wintered in the apiary, and I can average it up and tell that the colonies wintered in yield more honey than those wintered out.

MR. COPPIN.—He didn't state what protection he gave the bees on the outside.

MR. BENDER.—None at all, except that they have a cover with a one and one-half inch packing on top.

THE PRESIDENT.—When do you take your bees out of the cellar?

MR. BENDER.—The first warm day after the first of March. The first day it is warm enough for the bees to go out.

MR. DADANT.—I can verify the statements of both these gentlemen. We have wintered for eighteen years in the cellar. We wintered especially in one cellar. We tried another, which was too damp and not satisfactory. We wintered in our house cellar with a room partitioned off, and I agree with Mr. Bender's statement in regard to the temperature. We are taught by authorities that 58 degrees is the proper temperature for the bees to be quiet. I believe that. Tests have been made very carefully, and they are undoubtedly right, but we have found that from 42 to 45 degrees is the temperature at which the bees are the quietest. Mr. E. S. Miller, whose paper you read, told me the same thing. Mr. Bender says the same thing, and I wonder why it is that we found that the safest. They tell us Dr. Miller's thermometer was wrong when he thought it was 42 to 45, that it was higher, but we surely can't all be mistaken. I have an impression that it is necessary to have cooler aid on the outside of the hive than the experiments show the temperature to be inside the hive. We liked the cellar wintering because so many winters were too warm. When we had a week of warm weather the bees would get restless, and if there was the least bit of light would fly out of the window. On the other hand if we knew a winter that would be very cold, possibly six degrees below, we would want them in the cellar.

MR. BENDER.—What kind of cellar did you have?

MR. DADANT.—We had a large cellar and one room was partitioned off. It was very, very convenient. It is still there but is not being used for the bees. It is very dry and easily accessible. My father used to go to it regularly once or twice a week to see whether the bees were all right and make sure of the temperature. The wintering outdoors by the methods recommended at Washington is undoubtedly good. The

only thing I object to is the great expense, for six or seven hundred colonies of bees it is a tremendous expense to use the packing material they specify. We use forest leaves to pack our bees. There is one timber especially, that furnishes good leaves, oak, and they make the grass grow the following summer. We rake the leaves off the ground, put them inside the hives, inside the cap and around the hive, with chicken wire. We used to use slats, but chicken netting is the cheapest, although I am ready to agree that it is not as good as six inches of packing under the hive, eight inches around and twelve inches on top. That certainly is ideal. The only difficulty is the great expense, and putting it on in the fall and taking it off in the spring. All that counts. I once visited in Vermont Mr. Crane, a practical extensive beekeeper. I saw his bees in August still packed with winter packing. He said he didn't see any need for moving his bees out of the packing. Our hives are all bees and combs, but his hives were a good part packing. We cannot criticise his beekeeping, he is certainly a practical, successful beekeeper, so I think every man must judge for himself what is best for his locality. If he has mild winters where bees can fly every two or three weeks, I think it is the cheapest to winter outdoors, sheltering them, as we do, by raising the hive and leaving the front exposed on the sunny side; but cellar wintering where the winter is hard, north of here, I think would be all right from 42 degrees north. We are a little north of 40 degrees and it is right where it is a question whether to winter one way or the other. As I said, if I could tell before hand what the winter would be, we would winter the bees in the cellar during hard winters and out of the cellar in mild winters.

MR. WILLIAMS.—I made some observations myself, in reference to this same colony of bees that I purchased for a man in Pekin. He used extraordinary care in packing it last fall. He put probably six inches of packing around and made three small openings for the bees to pass out. This spring early he came to me one day, and said, "Mr. Williams, what is the matter with my bees?" "George," I said, "I don't know. Why?" He said, "There is a great cluster of them out in front of the hive, as big as your two hands." I said, "Probably they are starving to death." It was still freezing weather. Next day I saw him again. He said, "I took off the lid and looked at them, and the outside of the gum was full of capped honey." Then I told him they were too warm in there. His bees came out in that way and were exceptionally strong in the spring, but they had brood up until blossoms came, and they would stay out. So I believe that that packing is a success, but it is too expensive. He must have spent five or six dollars in making the packing of that one colony.

MR. DADANT.—I might give you our experience in that matter. I bought a strong colony, I think I never saw a colony like that, powerful in the fall. I could not go to that colony all during that winter, no

matter how cold it was, and tap on it, that they did not come outside to see what was the matter, but that doesn't happen very often. You do not have very many colonies as powerful in bees as that was. We have had experience in packing, too, but not as much as this. In our first wintering of bees we made eighty Chaff hives. A. I. Root was making a two-story Chaff hive, which is still known, three inches thick. We made our Chaff hive one story, three inches thick and three inches under, with a passage for the bees to get to the outside. There are bees in some of them yet, but our experience with those hives, with three inches of packing, was not satisfactory. One winter when it was very cold, and it lasted a long time, when a mild day in February came, when it was very important for the bees to take a flight, the warm colonies took flight. The three-inch colonies didn't budge, they didn't feel the heat of the day. Then another cool spell came, and it was a pity to see those colonies inside when the thing was over. They were absolutely wet with their own perspiration, and right there we learned the need of absorption in the upper story. We used oilcloths over our brood chambers, which were impervious to moisture, but the bees, as you know if you have ever used oilcloths or cloths of any kind over your hives, will keep pulling at them till they make holes in them, and we neglected in many instances to change the cloths. In the spring when we examined those Chaff hives, every hive in which the cloth had been used had more or less holes in it, was in better condition than in the hives where it was perfectly solid, and it is easy to explain. The breath of the bees would congeal around them and settle in the neighborhood, and when the thaw came it melted it and made a wet place in the hive, but where the cloth had a hole in it, in some places six inches across, the moisture went in the upper packing and the bees were perfectly dry. People can argue all they please about tight sealing, why should we give our bees porous sealing? I sleep in a bed with a woolen cover and if I had an oilcloth cover there would be no escape for the moisture. I want a gentle escape of moisture through the cover, and I insist with every one of you that you must have absorption in the upper story, and the chance for this moisture from the bees to ascend to the upper story, not ventilation, but a chance for the moisture to be absorbed. should be given. We had eighty Chaff hives, as I have said, and the result was that we poured in every one of them one and one-half inch holes, three of them. Now when those bees have a chance to fly in the winter, they take a flight, so they are better than the single wall hives, and in this way two men can pack a whole apiary in a day, in leaves. I do not give you this as a method you should follow. This is our method and we are satisfied with it, but certainly a more successful method is this system with eight and ten and twelve inches of packing, because they do not feel the cold at all, packed in that way, but it is too expensive.

MR. STEWART.—I have heard this talk, I used to talk the same way, and practiced it for years. I thought I could pack bees and handle them in a cellar as good as anybody. I thought I knew it as well as anyone. For quite a number of years I have been going out among the farmers and buying bees, any old shack they had, and finally I have made up my mind that I do not know a thing about bees when it comes down to that.

MR. STONE.—Mr. President, I am not anxious to tell how I keep my bees or how I kept them last year but nobody else seems to want to talk and I will tell you about it. I have one row of hives on a concrete foundation. You all know what that is. I drove stakes four or five inches back of them, high enough to support a sheet of corrugated roofing, and it is high enough to support the hives. I put that all along on the northwest side of the hive, the front towards the southeast. Then I put chicken wire netting around in front of the hive. I pack that full of leaves with boards over the top to keep the leaves from blowing off. They did not all stay there, and this year I thought I would put up the thing just the same way and put the leaves in, pack them under and behind the hives as I did then, and then pack leaves in till they are up to the top of that corrugated iron, and then between the hives I just put boards to hold the leaves down, so it is in that shape, and those boards run up between the hive and that chicken netting in front, and I believe the bees are packed the best they ever were. In three of the hives there is a half story full of leaves, that is the way it is now. The other part of my hives are packed against a board about that high (indicating between three and four feet), and the board sets up that way so that the hive stands on that. I don't back them at all. I just leave the two-surplus case on top, whether there is honey in it or empty. Sometimes it is empty and sometimes it is full of honey. Whenever it gets warm and I want some honey I go and take out the frames and put in others that are empty. I extract honey and keep on till I get through. I expect to follow that up all winter, and I will find out whether I am making a mistake or not. Last winter on some of the hives that I thought were light I left two or three frames full of honey and the balance empty. Last winter there wasn't but two of those hives in the back row that didn't come through all right, and I think there is only one in the front row that didn't come through all right. But many of them were lighter where I left the honey, so that I must have lost eight or ten of them in that front row that came through the winter all right, and then died because of the want of honey.

MR. STEWART.—You leave the upper story full of honey, leave that on, don't take it off this fall.

MR. STONE.—That is on now.

MR. STEWART.—Yes.

MR. STONE.—There is sixty pounds of honey.

MR. STEWART.—Don't take it off.

MR. STONE.—But I won't disturb the bees in cold weather.

THE PRESIDENT.—I can't agree with Mr. Stone's taking the honey from the colony during the winter. It has been conclusively proven that a hive standing out in the yard with plenty of honey—with his sixty pounds he talked about—that all a man did was to go out and kick it once a day, and the hive was dead in the spring. It illustrates that manipulations with the bees in the winter time disturbs them, causes them to consume more food and raise in temperature and start brood rearing at a time when it should not be started. About the high tight board fence, a tight board fence is not as good a windbrake as one that has cracks in it, for bees. In the northern country where men have studied it they build a fence out of lathes and leave about one-quarter of an inch between each lathe. In the first row of bees next to the fence there was very little loss, but the second row had a loss, for the reason that the wind poured over the top and down over the hives. The question of wintering to my mind, of adding packing, is to reduce the amount of food that they will consume during the year and bring them through strong. I believe you could give bees about 100 per cent and have auger holes bored through the hive, and they would possibly live, but you have lost possibly all your crop of honey you would have got from that colony the year before, and that is mighty poor wintering. This man says leave sixty pounds on. If every man in the State of Illinois had left that, the majority of us this year would not have any surplus. It doesn't take sixty pounds to winter bees.

MR. STONE.—I have taken sixty pounds of honey off and there was thirty or forty pounds left below. They have so much below I am afraid they haven't got room enough for the queen.

THE PRESIDENT.—Mr. Seastream was afraid of that, and he extracted a little honey, to give them room for the queen.

MR. STONE.—I did that where one queen had gone up, and there were two queens in.

MR. COPPIN.—I didn't have to extract any honey from below, I took honey from above and put it down below, and when I come to take the honey off I found the lower one was about empty. The result was that I had to leave one brood chamber and replace the empty combs with full ones.

MR. STONE.—Mr. President, I want to say I have extracted honey from some hives after it got cool enough so that the bees had gone down from the upper story, and I would put in empty ones as I would take them out, and I would hardly see a bee. Sometimes they would come out a little, and I would blow a little smoke on them and they would go in.

A MEMBER.—Did you have a queen excluder between them?

MR. STONE.—Yes, sir. But in the instance I spoke of the queen went up above that excluder.

THE PRESIDENT.—I don't believe ordinarily a queen will go through. One may occasionally, there are a few that will.

MR. STONE.—That one went through, and she has got good bees up there.

THE PRESIDENT.—I wouldn't want to keep a queen that could go through a queen excluder, she is too small.

MR. STONE.—I am going to make a test next summer. I am going to have one surplus case and another, let them keep building up as long as they want, and see how it will do.

A MEMBER.—In preparing the hives for the cellar, do you close the entrance so the bees can't get out?

MR. BENDER.—I carry them in, but the board is taken off as soon as they are put in the cellar.

MR. DADANT.—The way I have succeeded best in putting the bees in the cellar is to leave the bottom boards on the cover. We mark the number of the hive on the top, so we can put back the same colony in the same place, taking them out in their order as we put them in, so we know just where to begin when we put them back in the spring. We put only the box, we have oilcloths over the brood chamber, as I stated, we take the oilcloth off, put the straw mat over the frames, that is all that goes in the cellar when they are put in. When we take them out in the spring, if we think they are restless we throw a cloth over them till we carry them out, but they do not fly much till they are outside. In the cellar I think they should have plenty of ventilation. Put them out in the spring, that is one point where Dr. Miller and I do not agree. Dr. Miller says that bees do not remember their location. They may not remember it well enough to go back to it in the spring, but I can tell you the experience I had. You have heard me say we marked the hives so we knew where to put them back. One season we had two hives of a different kind on the wrong side of the apiary. We said, "In the spring we will put them on opposite sides of the apiary." We had two kinds of removable frame hives. Those two hives were changed back to the other side, and the day the bees were taken out my father called me and said, "There are some bees flying here in an open zone where there is nothing." They were the bees from those hives, looking for their homes where they stood the fall before. We put the hives there and thy came in. Then we carried them away again and it was all right, and they staid away, but I do not doubt that bees do remember in four or five months the place where they stood. It may do no harm to change them, but that is the experience I had. It might be that there is a little trouble that Dr. Miller doesn't notice.

MR. COPPIN.—I have never noticed any particular trouble, but I have never kept a record of where each hive belonged. I gather them

up and carry them in, just the bottom board with the brood chamber and honey board on top. In the spring I carry them out, drop them any place that is convenient, filling up the spaces, and before I get through I would find bees like Mr. Dadant was speaking about, located in a place where there wasn't any beehive. It was evident that I had the beehive that belonged there, put in some other place. The next time I came out with a beehive I would carry it over and drop it over there, and the bees would go in the same as if it was their own hive. They remembered their places. I have seen this happen a number of times, but I don't think they ever made any trouble. I don't think they fight.

MR. DADANT.—Mr. Stewart and I like to find fault with each other. He says, what is the difference? I will give you my experience. When we first began to take the bees out of the cellar we wouldn't have them marked, and we had a great deal of trouble with some swarms leaving their hives and joining other hives, so my father and I concluded that it was because they remembered the old place and got mixed up, and they became discouraged and left their hives to join other hives. The problem is to get out bees back on the stand and have them all quiet and satisfied. I do not say that that will happen right along, I am only telling you what I have seen.

MR. BENDER.—While I do not believe it is absolutely necessary to place them on the same stand, still I like to do that all I can. What I think is important about cellar wintering is not to put them in without bottom boards. I put the colonies about a foot apart, as recommended by Langstrath. We had one January exceedingly warm, almost summer weather, and the cellar become so warm that I couldn't keep them quiet. I tried to get ice and couldn't. I tried to ventilate as best I could, but there were more bees outside than in and I had to shut them up in the daytime or they would have left the hives. When it did turn cold I had five or six bushels in the cellar, trying to get out. I worked with them till midnight, and when morning came there were five or six bushels of bees outside the cellar that stayed there and froze to death.

MR. BENDER.—Why is it that colonies put out of the cellar will appear to be strong at the beginning of warm weather and will then die off? I have had that happen. I don't know why it is.

MR. SEASTREAM.—I don't believe they have enough protection to keep warm.

MR. BISHOP.—I think the bees shouldn't be taken out till the very last moment.

MR. BENDER.—I think that is a mistake. I take my bees out the first warm day, the first day it is warm enough for bees to fly, and they come through perfectly in the spring.

MR. BISHOP.—I think if you keep the bees in the cellar till settled, warm weather, that your bees will go right along better than if you take them out in bad weather. If you keep them until the weather is warm

enough so they can fly right along, they won't dwindle as much as when you take them out too early.

MR. COPPIN.—I have followed the practice of taking my bees out of the cellar when the bees outside have something to work on.

MR. SEAMSTREAM.—In the winter I take my bees in the basement. I did that last fall. As a rule I find that they do better than in a single-wall hive. It seems that we need to have the spring as well as the winter packing. If you have an exposed location a cellar is decidedly the best, but if you have a well protected location where the bees can get a flight occasionally through the winter, the outdoor method may offer as good protection.

THE PRESIDENT.—Are there any more questions? I think it will be well for us to adjourn. This is all the light we are permitted to have in this room, under the conservation act, and it is 5:00 o'clock and I think we had better adjourn till 9:00 o'clock in the morning, if that meets with your approval.

MR. WILLIAMS.—I move we adjourn.

MR. BISHOP.—Second the motion.

THE PRESIDENT.—It has been moved and seconded that we adjourn. All in favor signify by the usual sign, contrary the same. So ordered. The meeting is adjourned.

Whereupon the meeting was adjourned to meet Wednesday morning, December 10, 1919.

WEDNESDAY MORNING SESSION.

THE PRESIDENT.—Gentlemen, will you come to order? Is the auditing committee ready to report?

MR. KILDOW.—We are ready to report.

THE PRESIDENT.—Let us hear the report.

MR. KILDOW.—We have examined the books of the secretary and treasurer of the association, and we find them correct.

THE PRESIDENT.—Have you written out a report or do you just make that examination and report?

MR. KILDOW.—We just make that as a report. We find them correct with the association account.

THE PRESIDENT.—You have heard the report of the committee, what is your pleasure, shall it be accepted and placed on file with the other reports of the association?

MR. WILLIAMS.—I make a motion that the report of the committee be accepted and the committee discharged.

MR. TYLER.—Second the motion.

THE PRESIDENT.—It has been moved and seconded that the report of the committee be accepted and the committee discharged. Those in favor will please say aye, opposed no. Carried.

MR. STEWART.—Don't we have more bee diseases in the north than we do in other places?

MR. BENDER.—It is just as bad in the southern part of the United States. They have more bee diseases in Texas than they have here.

MR. DADANT.—I know they have them in northern Africa.

MR. PADDOCK.—For information I would like to say that we have about concluded in Texas that the American foul brood is more difficult to treat in that climate than it would be in Wisconsin. That proposition was brought out by at least three or four who were practical beekeepers, in addition to what theoretical experience we have had in control work. One man, for instance, raised bees in Indiana and Tennessee and had them moved to Texas. He fought the disease in three different states. The treatment that he gave successfully in Indiana and Tennessee was not successful in Texas. We were accused many times of using entirely too drastic measures, in that we preferred to burn rather than to treat, but our experience certainly tended to show that this radical treatment was necessary under the conditions existing, whether it be climate or something else, I am not prepared to say at this time.

MR. KILDOW.—The treatment that was successful in Indiana and Tennessee will not work in Texas.

MR. PADDOCK.—It will not work so successfully. It will work nicely in some cases, and where owners requested treatment they were given treatment, but in making up our records and the revisits and the retreats we concluded that the safest thing was to burn. We were criticised for doing that. I have had lots of criticism on that from officials in the north.

MR. KILDOW.—Would you lay that more to the locality, the southern part of the country being warmer than it is up here?

MR. PADDOCK.—That I do not know.

MR. KILDOW.—Foul brood is all from the same germ.

MR. PADDOCK.—It is the same germ. I think we find certain localities where certain germ diseases are more virulent than in others.

MR. WILLIAMS.—There is one thing that would make it more virulent down there, they raise broods so much longer, they have no cold weather.

MR. KILDOW.—I would think it would be under conditions of climate rather than it would be on germs, for the germs are the same thing as far as I can see, north or south.

MR. STEWART.—Mr. Kildow, is it the germ that causes foul brood or is it the result of foul brood?

MR. KILDOW.—You will get the result if you get the germ. (Laughter.)

THE PRESIDENT.—No modern scientific man denies that bacteria is the cause of disease. It has been conclusively proven. Mr. Paddock, we would be very glad to have your paper at this time. Mr. Paddock is the State Apiarist of Iowa.

MR. F. B. PADDOCK.—I feel that my paper is a little bit out of place in this good informal gathering here, but since I spent most of Thanksgiving Day writing it, I have got to get it off of my system some way, I can't afford to come all the way over here and then be disappointed. Disappointment with you might be all right, but before I begin on this long treatise, I have been much interested in a problem that has come before your association, as well as coming before the Iowa association, and that is the matter of attendance at our association meetings. The gentleman here this morning, counting noses, has said there were less than twenty-five, and this is a State association meeting. Now, there is another version of that. When we had our picture taken over there, we had, I guess, about sixty-five in attendance at our largest session. When showing that picture to one gentleman he looked it over critically and he said, "I have one criticism to make of that picture," and I wondered if it was the composition, from a photographer's standpoint, or not, and he said, "There are too many old heads in that picture." Well, that set me to thinking. That is really one of the

meats that I want to give you this morning in this talk, is the fact that the beekeeping industry today is not being taken up by the younger people. We haven't the younger people coming into it that we could have, and I believe that criticism of that picture was just, and I believe it more so since I have had the privilege of attending this session. The subject for presentation to you this morning is the need of more research in apiculture. The subject is of my own selection, so that I can blame no one for alloting me a difficult task.

The Need of More Research in Apiculture.

(F. B. Paddock, State Apiarist, Ames, Iowa.)

Needless to say it is with much pleasure that I am able to meet with the Illinois Beekeepers' Association in their annual convention. The subject for presentation is my own selection so I can blame no one for allotting me a difficult topic. Having been closely associated with beekeeping for only a comparatively short time it may be only natural that I find great need for information. However, in this short time many questions have been presented in a very forceful manner for positive answers. These were not available. For some time I have been impressed with the fact that we lack definite and conclusive evidence on many points of vital importance to the science of apiculture.

The practice of beekeeping is as old as history. Our literature is full of observation on the science and theories have found their way into our present books. Yet investigations by the approved methods have been less numerous than in almost any other branch of agriculture. It has been said that bees are worth more to agriculture in general than to apiculture in particular. In spite of this history and acknowledged importance, newer lines of study have resulted in far more advance due to much more active investigation. No line of study can offer more problems for solution nor can any results offer more for a science that can be expected in apiculture.

It would seem that our present aspect of apiculture is based very largely on observation and not on facts. There are some present who will resent such a statement. Our literature today records the observation of a few individuals and the collection of these forms the basis for the present teaching of the subject. This should not be taken as any reflection on the subject. It should not be taken as any reflection on the worthy men who suffered in an attempt to place at our disposal knowledge which would lead to facts later. All of these men of the past generation have well gained the meager recognition that this hurrying generation has given them. Today there are some who warn us against the easy error of bringing together the ideas of several of these early observers and attempt to make a success of beekeeping. A collection of opinions does not establish a principle or a foundation truth. There can

be no discredit to the noble endeavors of those early observers who worked under every possible handicap. But today there is a call for research which will put the science of apiculture on a firm basis.

Literature on beekeeping is quite common today and to many the art of keeping bees is already fully explained. Yet a consideration will show that there are but few books available for the student. The bee journals have done excellent work in fostering the spirit of observation, hoping that it might grow into investigation. A recent bibliography of the beekeeping literature was made which contains slightly over 1,200 references. Of this number only a few more than one hundred refer to research, the remainder refer to reports of observations, discussions and general discourses on the subject of apiculture. Why is it that today much of our meetings are taken up with the controversy on vital points of bee activity? Every one is entitled to his own views on a question and until he is proven wrong there is just reason for argument. An investigation is a study made in such a thorough manner that the need of argument is removed; the facts of the case are presented. The private observer is not in a position to plan and conduct a piece of investigation in such a way that most of the uncertain elements will be eliminated. Such work is not attempted today in other phases of agriculture. The people prefer to look to the experiment stations to bring out definite and conclusive results.

Should we blame any beekeeper for making the assertion that bees must secrete a certain amount of wax and that some of it is wasted because wax scales have been found scattered on the bottom board? There is yet much to be learned about wax secretion and comb building. We should not say that because some yellow comb happened to be constructed during the dandelion flow that the color of all comb is influenced by the source of the honey. Coincidence is not necessarily cause and effect. Too often we find that an observer is prejudiced in his views and the same is true of many investigators although it should be the aim of every true investigator to determine the truth. We have entirely too much of a person holding a certain theory and then by contorted experiments try to prove the validity of his theory.

In recent years the few investigations that have been conducted show a tendency to attempt the solution of the more technical phases of the work. Much attention has been given to the factors of heredity in the honey bee and the possibility of breeding a better type. A remark was recently made that bees were found in the earliest geological formations and comparison shows that there has been almost no change in their anatomy. Perhaps it is the temperament of the people today that because mating cannot be controlled there is a great desire to want to attempt it. In the investigations there has been a tendency to seek the end of the rainbow, leaving the small but fundamental facts yet to be determined.

Another glance at the bibliography shows that more investigation work has been conducted in Europe than in the United States. Is there any reason why we should continue to look to Europe for our basic information in apiculture? United States is the leading honey producing country of the world and the importance of the industry should most certainly justify the best possible research. We have men in this country who are just as capable of conducting careful research as can be done any place in the world. What is needed is first a realization of the need of research on the part of the beekeepers and second an appreciation of such endeavors and third a demand by them for research. Do you suppose the fruit grower attempts to solve the problems of horticulture? The experiment stations are asked to do such work and give the results to the industry of the country. The fruit growers of a state are proud of the fact that the experiment station of their state has done more for industry of the country than the station of any other state. Do we find this true of beekeepers and apiculture? There is yet too much of a tendency on the part of the beekeepers to attempt to solve their own problems in their own peculiar way. The fundamentals are evolved very slowly by such a process.

Today we are having heated arguments concerning the appearance of foul brood in the bee trees. The question is always foremost in any attempt to conduct a systematic campaign for the control of diseases. Our records do not show that an authentic case of foul brood in a bee tree or bee cave has ever existed. There are plenty who think they have seen the disease in a tree or who have heard that a neighbor saw what he considered foul brood. It is not said that parties made any attempt to place such a case on an undisputable basis. Furthermore it is never recorded that such cases were given proper treatment, the inference is always that such a colony was put in a box and brought to the house to suffer neglect in every possible way.

In the above mentioned bibliography we find 110 references to foul brood. This is more than one-twelfth of the entire number of references which shows the place in our literature that this subject occupies. In spite of this we are still ignorant on many of the most vital points of this very important subject. It has been commonly said that the disease are based on that assertion. Yet we cannot establish the facts that the disease is spread through the agency of honey. More investigations of a careful nature are needed at once on this subject. We do not know the disease organism attacks the larva nor what age the attack is made.

The controversy over the size of the brood chamber has been brought down to us from 1868, a period of 51 years. Yet today we are using a hive which is admitted is unsatisfactory because the personal experiments have not been so conducted as to not be conclusive. The private investigator can seldom arrange his experiment so as to eliminate enough

unknown elements and have sufficient checks on the work. Here again we find that ideas of the experimentor have colored the possible results. This problem furthermore is composed of several fundamental principles which have not been clearly understood and have not been taken into account. There are certain factors which when thoroughly understood and put together will determine the size of the brood chamber and no individual ideas will be able to change the laws of nature. We now admit that we are trying to produce extracted honey with a hive not suited for the purpose. Today our research is far behind the needs of the industry, instead of leading, as it should.

In the past we have had many devices given to the industry which were based on ideas rather than on facts. We have several non-swarming hives but the underlying principles of swarming are still not well known. We have tried to make nature conform to our ideas of how it should be. You may say that the beekeepers were forced to make these attempts at research, that no one was apparently interested in the development of this industry. The beekeepers have not made the need of apicultural research felt outside of their own sphere. If the beekeepers would devote their united energies to a request for scientific research this demand would be met today as it is being done in other lines of endeavor. Does the cattleman try out the best combination of feed for the cheapest gain? This need is put before those in charge of research and a solution is attempted and is usually given.

Today we find that in twelve states a popular demand has been met by printing for wide distribution a treatise on beekeeping. These papers do not represent any new research in apiculture but are a rework of ideas, theories, advice and beliefs that have been collected during the past generations. That these do serve a purpose is not to be disputed but the debt to the beekeeping industry has not been paid by the publication of such a bulletin. We are not any nearer the solution of vital problems than before these papers were printed. Let the need for further work be felt and it will be undertaken. In how many states today is active research in apiculture being conducted on a sound basis by the experiment stations? Research in apiculture is the last thing to be provided for and the chance to make it partially self supporting is the real attractive feature in providing for the work. Many men are interested in the problems of apiculture but must direct their energies to work which will receive support.

While it is going to be necessary for research to start at the foundation and work up, there is also an immediate demand for experimental work on problems of a practical nature. We will soon be face to face with the question of the cost of production of a pound of extracted honey. We have seen that other products have recently been put on such a basis, and little did we think that anything but supply and demand could change the price of sugar. Now we are figuring the cost of

production and a fair profit for the jobber, wholesaler and retailer. The consumer pays the price which is thus established. There was a recent movement to establish the price on cotton and it was found that the many variable and uncertain factors could be stabilized. Coal is now up for the same discussion. You may say that honey is not a staple—that is your fault. As a matter of fact honey is already past the luxury stage and the hungry world is now asking for honey. Before the close of the war we heard rumors that honey had been stored for three years in Australia, that our export to Great Britain and Europe was doomed as soon as the war ended. We were told that this honey could, and would be, offered at such a low rate that we would have to go out of business. Has any one heard of this recently? The last reports show that we are exporting heavily to almost every foreign country and the price is yet good. Another thing, our home consumption is increasing by leaps and bounds, probably governed by the supply. In Iowa the home consumption has increased almost 40 per cent in the last three years.

In the future, our research must not be restricted as it has been in the past. Apiculture is not dependent on bee activity alone, but is biological in aspect. Honey may be gathered only in accordance with prevailing climatic conditions. Alfalfa yields nectar in abundance under some conditions, but none at all under other conditions. Under the same climatic conditions cotton will yield honey on one type of soil but will not yield on a different type of soil. After a rain of known amount a flow from mesquite can be expected in a definite number of days. Problems of this kind could be mentioned almost without end. Research of a broad type and carefully planned is needed to answer such problems. They are entirely without the sphere of the individual beekeeper. But he must feel those problems and in turn make them felt in the circles of research before they will be undertaken.

In instructional work one comes face to face with the real shortage of exact facts of beekeeping. We know a few things are so, many more have been observed although seldom recorded carefully, and we think that other things ought to be so from personal deductions. It is the fundamental facts that we lack. A student recently asked how much royal jelly is necessary to raise a queen? Another asked about the character of food and amount consumed by the worker larva as compared with the drone larva. Our students today are taught the fundamentals of other sciences and they expect as much of apiculture. They have a right to expect it.

In extension work we find a great need for fundamental knowledge and also such adapted to the lines of practice. We can recommend a certain hive of a definite size to keep bees in. Why? Because it has given the best results under average conditions. Have we told how to keep bees when we have told this? The fundamentals upon which local

conditions can be built are seldom available for the beekeeper. It is only natural that bees will respond differently in a change of environment. This is what makes location. In one state there were enough well defined localities which the beekeepers came to appreciate could only be solved by research that they received support from the state legislature for regional experimental apiaries. This is an example of what ought to be done by the beekeepers everywhere.

The children of beekeepers are sent to our institutions of higher learning for education. How often are they given any instruction in apiculture? Is it any wonder that the ranks of beekeepers contain few young individuals—that the recruits of the industry are made up entirely from outside the industry? A fruit grower sends his son to a college to learn the technical side of the horticulture. The same is true of other industries. Is it justice to the beekeeper that his son is not allowed to learn anything of apiculture? When the government made a recent survey of the colleges for vocational training of the soldiers they found that only six colleges were offering any work in apiculture. The industry would have proved attractive to thousands but there were no facilities established for the instruction of such work. Now the government is trying to develop instructional work in apiculture. In the institutions mentioned above the courses in apiculture are elective which means that if the student can find time he may receive instruction in the subject. I have had a number of students come to me this fall who expressed deep regret that it was not possible for them to pursue study in apiculture. Some of these came from homes where bees were kept, others were interested in becoming beekeepers.

The remedy for the situation outlined briefly in these pages is not easy nor will it be solved at an early date. Possible methods of proceedure are somewhat limited. The first thing is for the beekeepers to realize that the problem is out of their sphere for solution. Then they should come to realize the value and the necessity of research work. Provisions for research work will only be made by the states at the insistent request of the beekeepers. Investigation must proceed instruction and extension endeavors. We should be able to build centers of apicultural research as well as of field crops and soils. Following more investigation, of both technical and practical nature, more instruction should be developed in the colleges. This is the business of the beekeepers and they should see that the matter is given proper attention.

The President.—This paper is open for discussion.

Mr. Kildow.—I want to comment on one thought in there. I do not know who is the author of it. He states in there about parties inferring that there is no foul brood in bee trees. The party that made that I think is very badly off. There is nothing in the world to hinder foul brood from going into a bee tree; only that there is no gum there. Foul brood is no respector of bee gums, skeps, hives, or anything else.

Because these certain parties have not seen a bee tree that has foul brood, it is not right to say it is not there, because it has been there and it will be there again. I know one case in my own neighborhood, where two trees have been cut, that were actually rotten with foul brood, American foul brood at that. I think a distinction should be made where one party says that because they have not seen foul brood in trees it does not exist there, because it is there. That is about all there is to say about it.

MR. PADDOCK.—Don't infer from my paper that I said foul brood doesn't exist in trees.

MR. KILDOW.—No, I don't say that.

MR. PADDOCK.—You say it exists.

MR. KILDOW.—I say it does.

MR. PADDOCK.—What proof have you got?

MR. KILDOW.—My eyes are good enough.

MR. PADDOCK.—Will they stand as evidence before any jury in the United States, as proof?

MR. KILDOW.—I believe I am as capable of testifying what the American foul brood today is, as anybody else.

MR. PADDOCK.—What steps would you take to put that on an indisputable basis and hand it down to future generations?

MR. KILDOW.—My general knowledge.

MR. PADDOCK.—Would you sign an affidavit and make proof of your knowledge in that way?

MR. KILDOW.—Now you are coming down to technical things.

MR. PADDOCK.—But it is necessary to be somewhat technical about these things. You can't go into court and say, "I assume foul brood does exist or does not exist," until you have got the best evidence.

MR. STONE.—What does it take?

MR. PADDOCK.—It takes affidavits.

MR. STONE.—What kind of affidavits?

MR. PADDOCK.—If I were you and I found one case of American foul brood in a bee tree, I believe you owe it to science, and to disease eradication work, to send a sample of that diseased brood to Dr. Phillips, who in turn would make affidavit to the fact that that was diseased, and you would make out an affidavit to the effect that you had found this foul brood in a bee tree.

MR. STONE.—Probably that would be very good, but there is lots of red tape about it.

MR. PADDOCK.—That doesn't make any difference.

MR. KILDOW.—That doesn't dispute the fact that I know foul brood when I see it.

MR. PADDOCK.—I don't want to enter into any personalities, but we must have definite facts to work on, and proof of them.

MR. STONE.—I know the facts.

MR. PADDOCK.—I am glad this came up. If I can do one thing through this paper, if I can get affidavits on record that the disease does occur today, then we can go into court and accomplish something.

MR. STEWART.—The ordinary man doesn't know foul brood when he sees it.

MR. COPPIN.—There is nothing to prevent foul brood from being in a tree any more than there is in a box or a hive, or anything else, and I for one have never cut open but one bee tree to see whether there was foul brood there or not, but I have found it in box hives plenty of times.

MR. PADDOCK.—I know. I am not saying it is or is not, but we haven't got the evidence.

MR. KILDOW.—You say to make this thing sure a man has got to take a sample and have it examined, send it to some bacteriologist or entomologist for him to pass on it, and get it out in black and white before you will believe it.

MR. PADDOCK.—I am not saying they will not believe, but it has to be presented in a certain way, to get results.

MR. KILDOW.—To establish the facts?

MR. PADDOCK.—Yes.

MR. KILDOW.—I suppose it is all right. Under that I would pretty near have to, if I went to a yard and found foul brood there, I would have to send a sample out for examination before I would know positively whether it was foul brood or not.

MR. PADDOCK.—That is another point. I will put my experience up against anybody else's on foul brood, but that doesn't go.

MR. DADANT.—I can see the point our brother was trying to make. Before the courts we must have the testimony of officials, not hearsay. The testimony of a state inspector in one state probably will not be valuable in another state, but the testimony of an official of the United States will pass anywhere. The testimony of finding a certain thing such as disease in a tree, by any man in a state, that he sends to an official of the United States, will also pass, and in that way he will establish the fact. I can see that Brother Paddock has not tried to deny the existence of foul brood in trees. It would be absurd to try to do that, because foul brood can exist there just as well as in hives, a little easier, because nobody is there to fight it, only when you cut the tree down, but I can see if it is necessary to prove the matter before a court, that it will be required that you have affidavits. I think that is simply a matter of form, not a matter of importance otherwise, and a statement of this discussion and this report is going to have some influence on the knowledge of foul brood in bee trees.

MR. STONE.—You do not claim they do not exist?

MR. PADDOCK.—Oh, no.

MR. STONE.—I was wanting to know what reason you had for it. I believe this ought to influence our foul brood inspectors, so that they will make that a matter of record.

MR. KILDOW.—I understand these other parties said they never saw it in a bee tree, and they discounted the fact of it being there.

MR. PADDOCK.—I might say I am not going to believe what John Smith said, I have my own opinion. I wasn't quoting from any case, I was quoting from a collection of cases.

MR. KILDOW.—They didn't think it existed.

MR. PADDOCK.—That wasn't the point at issue at all.

MR. KILDOW.—That is what brought up this discussion.

MR. PADDOCK.—I am glad it did.

MR. KILDOW.—I might say because I never saw it in a bee tree, that it isn't there.

MR. STONE.—Mr. President, when we were trying to get out foul brood bill through the Legislature, before we had ever had one, Mr. Funk was on the appropriations committee, and there was a statement made to the effect that if we did eradicate foul brood it was still in the bee tree, and we couldn't get that out; that thing beat our getting our bill. Now, something ought to be done along that line to get that established before the tribunal, whether they want to believe it or not.

MR. KILDOW.—I believe that the inspector's say-so will go in court if he says "This is foul brood," or "that is foul brood," be it tree, or box, or hive, wherever he finds it. I believe his word will go if he is the head of the apiary work, and inspector. I believe it would hold.

MR. STEWART.—It will carry before a jury, your word as soon as anybody else's.

MR. PADDOCK.—This is getting to be quite extensive argument, and I want to keep it on a high plane all the way through. I am satisfied myself that any person, be he inspector or citizen of the United States, owes it to the beekeeping industry of the United States to get a few of these affidavits on record, regardless of whether he has any lack of confidence in his own judgment or not; but you make the point that your opinion should go before a jury and a judge, as to whether you know foul brood or not. I had one experience that set me to thinking quite a bit along this line. I can feel for you and feel with you, because I have been in the same work and am virtually now. It came up in one of the biggest pink boll worm cases that has ever been tried in a County Court, because the whole cotton industry of the South was at stake. Just to show you how these technicalities can come in, the law said these inspectors should be competent entomologists. The court asked as to what is a competent entomologist, and they never yet were able to settle that point. It shows you what fool things will get into cases in court. The fact that there isn't today on record any certified statement makes it necessary, the whole beekeeping industry has been built up on a few

sections and a few suppositions. I am not saying that those suppositions are not all right, but if we want to use the term "scientific men" in the broadest sense and not as most people consider them, a scientific man is willing to admit things upon presentation of facts even though he is not willing to admit it upon a recorded observation, and that certainly makes it worth while for you and I to put these things where they cannot be disputed. I know positively that if I saw foul brood in a bee tree there would be plenty of men in the United States to say, "What does he know about foul brood?" So I think we owe it to ourselves and to the industry at large to put a few of these things on record and then we can build on top of that.

MR. KILDOW.—Then to make a long story short I think I will propogate one and send a sample in.

MR. PADDOCK.—I would make an affidavit, sending a sealed sample to Dr. Phillips' laboratory, and ask for an affidavit.

MR. KILDOW.—I might have to get half a dozen affidavits to say that I was the man that sent the sample and that I got it in a certain place.

MR. PADDOCK.—The result would be worth it, regardless of the trouble it would be.

MR. WILLIAMS.—Mr. Chairman, I think the whole trouble lies in the fact that most people that find bee trees don't want to tell it. They might have found foul brood in the tree, but they didn't want to tell that they cut that tree on John Smith—for it is usually on somebody else's land that the trees is found—on his place, because he would prosecute them for it, that is probably why foul brood in bee trees has been so rarely seen. I know of my own personal knowledge of one bee tree being cut. I helped cut one. There was no foul brood in that, but I suppose that in the last five years there has been fifty bee trees cut within a radius of five miles of my place. Most of them have been cut at night. If there chanced to be any foul brood in those trees, the parties that cut the tree would never mention it because they were cut without the knowledge of the owner, and I think that is the general rule; I don't want to say that Brother Kildow did that, that he went over on some other fellow's place at night and cut these trees, but that it has been the general experience regarding bee trees.

MR. KILDOW.—I have been there. (Laughter.)

MR. DADANT.—I guess we will have to hammer Brother Paddock. The first thing he said was that somebody criticised the picture of the Iowa meeting because there were too many old men or too few young men there, I don't know which it was.

MR. PADDOCK.—Too few young men.

MR. DADANT.—I have been attending meetings for upwards of forty-five years, and when I come here and count the old men, the men

who were there forty years ago, they are scarce. It is young men all the way through, and he himself is one of the youngest.

MR. BENDER.—Mr. President, I think it depends in that case on who is making the observation. A man is likely to consider any man young if he is younger than he is. You ask a man eighty years old about a man seventy-five and he will say, "No, he is not very old, he is three or four years younger than I am." (Laughter.)

MR. STEWART.—The reason why the young men don't come is because beekeeping doesn't pay. It doesn't pay, that is the reason they don't come.

MR. PADDOCK.—How do you know it doesn't pay? We are making people believe that they can get rich making honey.

MR. STONE.—Mr. Stewart, I want to correct you on that. I get a good many letters from members far away, that have only got three or four bee hives, and they say, "We find that it pays us big."

MR. STEWART.—Is that their whole income, what they get from three or four hives of bees?

MR. STONE.—No, but it pays.

MR. STEWART.—A man can't make a living on a thing that does not pay. That is why the young men do not take it up.

THE PRESIDENT.—I think personally if the great majority of young men do not take up bee keeping it is because they like better some job that has less work about it.

MR. STONE.—If you will take the president or secretary of this association, they are not either of them specialists. Look at our president. He is a practicing physician. He has got a farm that is five times as big as mine, and I have got all I want to attend to on my farm, without attending to my bees, but beekeeping pays us.

MR. PADDOCK.—I am on the floor here a great deal——

THE PRESIDENT.—That is all right, it is your paper.

MR. PADDOCK.—But it is all dear to my heart. One of the points I wanted to bring out in that paper, and one of the thoughts I wanted to leave with you was this: that a young man is not given the opportunity in our educational institutions today to find out anything about beekeeping, to know whether it is a good business for him or not. Now, I went to college and I learned about horticulture, about stock judgment, about a lot of things, but I didn't learn anything about beekeeping, and how was I to know whether it was hard work or whether it was easy, whether it was good or whether it was bad. I didn't, and one of the things I am pleading for today is a proper appreciation of beekeeping and a proper place for apiculture in our educational institutions.

MR. GILL.—I think no doubt there are a good many people in our country that are making beekeeping very profitable, and I notice a good many of them are of the younger men. There is one thing, I think, this paper should lead us to is the idea of cooperation. I think that is a word

that ought to be hammered and hammered among us, that until we can get together and work together, we are not getting ahead. I haven't any sympathy with that idea of a beekeeper that doesn't want to help somebody else, because he thinks there isn't room for anybody else. I believe that when we get to producing ten times as much honey as we are now producing, it will be all sold and we will be just as sure of getting a good market for it, a good profit out of it. When honey is before people so they do not get out of the habit of buying it, they will buy it. I think this paper ought to lead us to think what we want from the hands of our State, from the hands of our University, what we are going to ask for when we have an opportunity. I think that ought to be the idea put before the people when they are asked to join the association. Here is a chance to get into a strong organization and help us to get in people when we have an opportunity. As long as there are just a few in it, or a few asking for anything, we are not likely to get results, but if we are so organized that when there is an opportunity a lot of us are going to stand back of our demands, then we get results. I think this paper ought to lead us to that. I think that next year one of the things we should discuss is, what we want at the hands of our State, what we need. I know Wisconsin and Iowa and some of these other states are getting some attention from their universities. I haven't heard—I don't know whether our State universities are doing anything along that line or not.

MR. BENDER.—The trouble at Champaign seems to be, in the first place they haven't got the money, and in the second place they can't get a demonstrator for the apiary work. That is what they tell me, they seem to think the first thing is to get the money. Perhaps we might help them and the State to get an appropriation so they will be able to help us.

MR. KILDOW.—The demand has got to come from the outside.

MR. PADDOCK.—It has got to come from their own industry.

THE PRESIDENT.—I believe that. It has got to come from the beekeepers first.

MR. KILDOW.—The worst trouble is that we are every fellow for himself. We need more cooperation.

MRS. KILDOW.—Mr. President, I was just thinking of some of the letters received at the office of the inspector. Among those are some that are meditating going into the bee business. I would judge that there is a lack of funds for the beginner. Now in school teaching, in almost every vocation of life, you would scarcely expect to step in on the top round and go to work from simply picking up a journal and reading it. Too much, as I say, is left for the idea or the thought of others, and it is always of course in some particular locality. While we all know that theory is one of the best things to have, if you have what I term "mother wit" enough to decide what theory will suit your conditions,

whatever they may be, unless there is a foundation, as I understand from the paper that was read the main object was to get self-evident facts as much as possible, if you please, which would serve as a foundation in teaching beginners certain things that were to be depended upon under all conditions, and then after that to advance to a time having this in the State institutions who bring practice with theory, that will show where and how you can use that theory—unless they have the practice they are going to fall down. I think that is where some of the young beekeepers become discouraged. One beekeeper in Wisconsin will have his ideas of what works out, because it has been practiced there for so long. He knows just when and under what circumstances to use that theory, but if a beekeeper in southern Illinois attempts to use that same principle it may fail for him, just as in introducing queens. One man will have a certain method and he will introduce them successfully; let someone else try the same method and the queen will be killed, not the fault of the method but of the conditions or use. I think it has been well said that unless beekeepers will arouse themselves to the fact that they need both theory and practice, until that thought has been instilled in the young people, until they find that no one is going to succeed in any occupation unless there is something to rely on, to make progress, there will not be many young people enter the field, but when this time does arrive then beekeepers will increase. (Applause.)

The President.—If there is no further discussion, the next on the program is a paper by Mr. C. P. Dadant, of Hamilton, Illinois. We will be very glad to hear from Mr. Dadant.

Mr. Dadant.—Mr. Chairman, ladies and gentlemen, I brought a paper with me, but somehow I felt that a paper doesn't reach the people. I don't know whether it is my method of reading, or what, but I feel that it is better for me to give the paper to the stenographer and ask her to not put down any of the talk I will give, because she will be likely to misunderstand it, but take the paper, and when you read the report it will be quite different.

Big Hives.

(By C. P. Dadant.)

Some of my hearers will probably think that this is a hobby with me, for they have perhaps heard me elsewhere, or have read something from me on this same subject. But really, the question of big hives, which we discussed very largely some 35 to 40 years ago, was set aside by us as a hopeless question when brought before an audience of American beekeepers.

It was only three or four years ago that Mr. Pellett, then one of Iowa's leading beekeepers, had occasion to investigate our private system of beekeeping, in actual practice. He became enthused, urged us

C. P. DADANT,

Editor of the American Bee Journal.

to bring it forward and brought it forward himself at meetings. Evidently the time was ripe for an investigation of this question by the American honey producers, for we have heard about it on all sides. We were requested to address beekeepers, on large brood chambers, not only at State meetings, but also at "short courses" at colleges. The attention given to what has been called the "Dadant System of Beekeeping" is very pleasing to us, for we think no beekeeper will ever regret having investigated it, whether he follows it or not.

Our adoption of large hives was due to comparative experiments of big with small hives on a large scale. For instance, as early as 1870, we happened to buy some 40 hives of 20-frame Quinby size. These were too large. But we also tried very small hives, for we used a number of nuclei, at about the same time and tried to winter colonies upon six frames half the size of a Quinby frame or 9 inches in length by 11½ inches in depth. We finally settled upon the hive which we now use, which contains 10 Quinby frames and is about equal to 13 or 14 Langstroth frames.

When a man shows a preference for a certain thing, he should be able to discuss this preference and tell the reason of it. That is to say, we should be able to give the theory of our practice. In fact, it is much easier to explain a theory when you have had years of practice to prove its value, than to propound the theory first. I judge others by myself and I readily imagine that others have, like myself, built up theories which practice proved incorrect, because we had overlooked some facts, seemingly unimportant, which overthrew our plans and our reasoning.

There is a fundamental fact in beekeeping which every honey producer acknowledges as the basis of success. It is the producing of a large force of bees, as large as possible, in our hives, for the honey crop. It is true that bees are not all similarly active, that some races are better gatherers than others. But given a colony of active bees, it will produce honey according to its population of field workers at the time of the honey crop. So it is imperatively important that our colonies should be enabled to breed to the utmost of their capacity in time for the harvest.

Given two colonies of active bees, the one which will succeed better is the one whose queen is the more prolific of the two. This is also an axiom which cannot be denied. However, there is a condition to this. The prolific queen must be given occasion to develop her prolificness at the right time. As Mr. Demuth, of Washington, puts it most happily, we must produce our bees "for the honey crop and not upon the honey crop." Granted this, our brood chambers must be of a capacity which will allow the most prolific queen to breed to the limit of her fertility during the season preceding the time when her bees will prove useful in the harvest field. As it takes 21 days for a worker bee to develop from the egg and two weeks more before this bee will become a field worker,

in normal conditions, it is threfore necessary that the heaviest of the egg-laying should be at least five weeks before the full harvest.

The queen should have ample space to lay all the eggs that she can produce. Ancient writers stated that a queen would lay the immense number of 200 to 500 eggs per day. Dzierzon, Berlepsch, Langstroth and Quinby discovered that queens could lay about ten times as much as above stated. Our late friend and teacher in the rearing of queens and the production of honey, G. M. Doolittle, stated that he had queens lay 5,000 eggs per day. This is extraordinary. But it is not extraordinary to have a queen lay 3,500 eggs per day for several weeks together, if everything is favorable.

Now what are the favorable requirements for a queen to lay the largest number of eggs that she is capable of developing in the few weeks of intensive breeding?

There must be: First, plenty of bees to keep the brood warm and nurse it; second, plenty of food, honey and pollen; for it is out of the question for bees to rear brood unless they can feed it; third, there must be plenty of available room, plenty of worker-cells in reach of the queen.

Here is a point upon which we must dwell. Experience has taught us that the standard Langstroth hive is too shallow. At any rate we never succeeded in getting as much brood in Langstroth frames, at one time, as in deeper frames. Why?

Did you ever have frames with a partition in them, a cross bar, either horizontal or perpendicular, in the center? If you did, you have perhaps often noticed that the queen may lay eggs on one side of that partition and not on the other side, at that time at least. So, if there is brood on both sides of a dividing bar, the brood may often be of a different age. The explanation of this fact lies in another fact. The queen, in order to lay eggs as fast as they mature in her ovaries, must lay them very rapidly. So she follows a very methodical practice. She lays around a circle. Beginning in the center of the cluster, in the warmest part of the hive, she keeps going around that center, laying an egg in one cell, then going to the next cell to do the same. A little reasoning will readily show us that it is necessary for her to do so. If she were to go at random, she might look into hundreds of cells that were already occupied before she found one that was empty. Old queens that have lost their wits and probably also their fertility do that very thing. They lay their eggs in a scattered way, and a good beekeeper will usually pass upon the value of a queen according to the more or less methodical way in which she follows the circular method in laying. It is not difficult to recognize method in a queen when we look at the greater or lesser regularity of her brood in the cells.

When the queen gets to a cross bar, during her regular egg laying circle, she is thrown off the track. She either goes beyond that cross bar, hunting for more cells and resuming the thread of her regular

laying after more or less delay, or she turns back and goes the other way. So the larger the circle that she finds, the better she is able to develop her fertility. This fact explained to us why the colonies in large frames proved better honey producers than those in shallow frames.

A colony in an 8-frame Langstroth hive may be given enough room, by putting a second story on top of the first. In fact it is given too much room then. Sixteen Langstroth frames are too many for a queen to fill with brood even when we deduct the space needed for honey and pollen. It is true that she may put brood in nearly all of them, if the weather be warm and the colony powerful, but the combs will not be filled full and when the crop comes, if the same amount of breeding room be left, there will be a large amount of honey placed around the brood.

When we use a two-story Langstroth 8-frame hive for breeding, if we do not wish to harvest honey mixed in among the brood combs, we must do like our old experienced friend, Dr. C. C. Miller, who removes one of the two stories when the crop is fully on and confines the queen to the lower story. This is the only way to make sure of a satisfactory honey crop with small hives unless we use queen-excluders between the stories.

There is another disadvantage to putting on two or more stories. The queen is much more likely to go up from the lower to the upper than to come back to the lower one. She will usually go back only when the storing of honey in the cells drives her back by the shortage of breeding space. If three stories are given she will often roam over all three.

For the reasons above mentioned, we found, both in practice and in theory, that the brood chambers which the English call "storifying brood chambers" and that we call shallow breeding stories, are not so advantageous as the large brood chambers, for the production of brood and bees in anticipation of the honey crop. But there is another disadvantage to the shallow brood chambers.

Bees breed in a circle. That is because the cluster always forms in the shape of a globe, the best shape to conserve heat. So in winter we find our bees clustered in the shape of a ball. In a shallow hive, the bees at the top of the ball are too near the top of the hive. The amount of honey stored, which should be normally as nearly as possible above the cluster, is more plentifully stored on the ends, less in reach of the bees when the weather becomes very cold. In this as well as in the previous subject mentioned, we found theory and practice to agree. Bees in shallow hives winter less successfully than those in deeper frames.

This, although not invariable—there is nothing invariable in bee-keeping—proved sufficiently uniform to induce us to abandon the Langstroth frames in our practice.

Deep, large brood chambers, are therefore preferable for use in our opinion; because they allow of greater breeding by the queen at the proper time; because they allow of the wintering of a larger population, in better reach of their honey. So we have better success in wintering, more bees in spring, more bees for the honey crop and a greater crop of honey in consequence, with less anxiety about sufficient stores for the cold season.

Small hives cause much swarming, having a more crowded condition when the colony is at its maximum. Small hives produce less bees than larger ones. Small hives contain a scanty amount of honey for winter. Small hives, being less populous, there is greater danger of their being lost through cold. Small hives, confining the queens in their breeding, do not allow the beekeeper to recognize which queens are the most prolific as easily as he may recognize it with large hives. So he is not so readily able to select his best queens for breeding queens. Small hives cast more but lighter swarms than large hives. Small hives, when tiered up, have a narrower base than large ones and are therefore more easily upset by strong winds. Small hives are less easy to ventilate, since for the same amount of space, the bees have to force the air a greater distance in order to ventilate the entire hive and supers, than with broader hives.

However, small hives have some advantages. They are easier carried about, to make divisions, to put them in the cellar, and for all the manipulations of artificial increase. They are also cheaper. More of them may be loaded on a single vehicle to transport them to and from outapiaries. Small, shallow hives, such as the Langstroth, may be made of lumber not over 10 inches wide, in one piece, while deep hives, in the present condition of the lumber trade, must be made of two pieces tongue-and-grooved, for sufficient depth.

We hold that a large brood chamber should be compact, sufficient for all the requirements of the most prolific queens and to supply all the honey that a populous colony will need for winter. This honey must be in available reach of the cluster. A large number of shallow frames, such as those of a 13-frame Langstroth hive, is not as satisfactory as a smaller number of deeper frames with the same comb surface. It divides the cluster unnecessarily, it increases the manipulations, it compels the queen to change from one comb to another oftener to lay the same number of eggs. It supplies less honey above the cluster in winter. The more honey there is above the cluster, the more safely bees will winter, if they are compelled to remain for several weeks without moving their cluster.

THE SPACING OF THE FRAMES.

The spacing of frames has also something to do with the success of the colony. It is one of the important points in the consideration of large brood chambers.

Our early teachers, Langstroth and Quinby, were divided upon the question of frame spacing. Langstroth spaced his frames a trifle over 1⅜ inches from center to center. Quinby took the comb spacing of 1½ inches from Dzierzon. Each thought he was right. But there was no discussion of the point. No comparative experiments were made at that time. Yet there is quite a difference in results. The more I dig into this subject, the more I am convinced that the wider spacing is advantageous.

When we go to the bees for their advice on this matter, we find that they accept either spacing. As I stated at your meeting of 1917, we did not realize how much advantage there was in the wider spacing till our attention was called to the question.

With the wide spacing there is a greater amount of room for ventilation between all the combs, during the breeding season. This puts the colony more at ease and helps prevent natural swarming. It also gives the bees more space to store honey in each comb, for in the winter they will not need so large a passage, so they thicken the part of the combs in which honey is put. There is thus a greater amount of honey in each comb above the cluster creating a more desirable condition, since more bees can cluster under it and there is less need of their moving away to get to the stores.

The only objection to the wide spacing that has been raised by objectors is that it requires more bees in spring to keep the space warm between the combs. This is true. But in practice we find that, since the bees winter better, in a larger cluster, there are also more bees, as a rule, when spring comes, to keep the brood warm, and the cycle of the seasons is thus gone through with greater success.

Large comfortable brood chambers produce larger colonies. They also require larger supers and these are filled as readily as smaller supers on smaller hives. This result is evident to anyone who tries large and small hives in sufficient numbers side by side. I have heard people say that they had tried 8-frame and 10-frame Langstroth hives side by side. They thought that they had tried large and small hives. But the 10-frame Langstroth hives are not large hives. To make a positive test, with prolific queens, of large and small hives, one should try at least 12-frame Langstroth brood chambers.

I do not wish to be understood as condemning beekeeping with small brood chambers. A man can succeed even with small hives. But I have positive evidence that large hives are best.

I have no ax to grind. I do not wish to be understood as claiming a panacea. I repeat it, our extensive experience with large and small

hives dates back over 40 years and every year adds to our convictions. But we should not have raised this subject in conventions, had it not been for the enquiries of our friends. The facts which I have given will bear discussion and we are very willing to have them thoroughly ventilated.

In closing, let me make one suggestion to those who may be disposed to try the large brood chambers. Do not make a test trial on too small a scale. Any comparative experiments should be made on not less than half a dozen hives of each kind. More would be still better. In a trial on a small number of colonies we may strike exceptions. Our own tests were made on hundreds of colonies. The answer has been overwhelming.

MR. SEASTREAM.—In this locality a 10-frame hive is altogether too small for the breeding room of a good queen. At the time the honey flow commences we need to have a hive that consists of twenty frames—two 10-frame hives, one on top of the other. In some cases I find that the queen, even if she has the privilege of going to the third story, she will go to the third story and raise a lot of brood in some years, but I believe that in this country here, and in this neighborhood, that we should have plenty of combs for the queens to brood in, up till the honey flow commences, then as a rule we go to work and contract the brood chamber by using a queen excluder, and there seems to be plenty of room to breed in after the honey flow commences.

MR. DADANT.—There may be queens more prolific than we have had, but as a rule when we examine a 20-frame hive we find if we put all the brood in about eleven or twelve frames, that we can figure on 20 to 25 per cent of the room for the honey. With thirteen frames we would practically have all the brood and quite a good deal of honey. We have queens who go five stories. If you have three stories you will have brood all through them, but when you take the average brood you will find if you had thirteen frames that you could put it all in there. It is very rare when you have a queen that will fill more than thirteen frames. The queen prefers to go up. You queen breeders that try inserting a queen in a cage, will learn how hard it is if you do it this way. Those are little things, but it gives us an idea of what the queen's feeling is; she wants to go up, I suppose, because it is a warm place. After leaving the first story she goes to the third and she won't come down unless you force her or carry her down. With a shallow super she is more likely to return, because it gives her so much trouble in making her cycle. When she goes back down she has a large space.

MR. BENDER.—There is one thing that hasn't been emphasized. Mr. Dadant is speaking about the production of extracted honey. If you use these deep frames for comb honey, I find they are a disadvantage, that the two inches of extra depth in the frame gives the bees a chance to get started in the frames below, and they don't work in the sections

so easily. The deep frames are all right for extracted honey, but they are not good for comb honey.

THE PRESIDENT.—What is your objection?

MR. BENDER.—They are heavy and unwieldly to handle, they break easily; you have got to be careful about your combs, and not turn your extractor too fast.

MR. DADANT.—Mr. Bender is right in the remarks he makes. If you want to raise comb honey you must narrow it down to the space the brood will cover. Some queens are not so prolific as others. If you leave the whole space, bees will put so much honey below that space, and have it sufficiently close above, but if you narrow it down, using Dr. Miller's method, two 8-frame hives, when the crop is on he removes one, puts most of the brood in the lower story and puts his supers on. The deeper frame will take more honey if you have plenty of room, but, if you will narrow the hive at the time you put the supers on you will not have any trouble. Large hives are unwieldly, they won't do for two stories. Don't try to use them, use shallow supers. Some people will say, why not use all one size? Why do you use sections? Sections is a different style from deep frames, but no man will ever make a mistake in taking shallow frames instead of a deep one, although if you have a frame one inch shallower or deeper than another, you may make a mistake. You will find that for extracting the knife at one stroke cuts the comb. All you have to do is come up on one side and go down on the other. You have your comb and cap. I have a son-in-law who has had experience in that. He has been extracting ever since he was a little boy, and we know the shallow supers are very much better. All produce honey, and I am not coming here to tell you to change your style of hives. I only want to tell you what we do and why we do it, and if you see fit to try our methods, don't try it on just one hive. Dr. Miller tried one hive and the hive didn't do well, and he concluded he wouldn't go on. If you try another style, try it on a half a dozen hives, anyhow, then you won't have an exception on which to base your ruling. It is a poor way to make a rule out of an exception, and you never know whether you are making a rule out of an everyday happening or out of an exception, if you only have one hive; but as I say, I didn't come here to go into these things, but just to explain what I believe to be the better way.

A MEMBER.—What is the difference between the modified Dadant hive and the last issue?

MR. DADANT.—The modified is the same as the Quinby but two and a half inches deeper.

THE PRESIDENT.—The next thing in order is the election of officers, and I think it would be well to finish up before dinner, as some have to get an early afternoon train.

MR. PADDOCK.—Will you kindly give me just a minute?

THE PRESIDENT.—Yes, you can have all the time you want.

MR. PADDOCK.—In this work and along the lines suggested in the paper that I inflicted on you a while ago, there is a general misunderstanding of the beekeeping industry on the part of the people outside of the work. When we talked of the beekeeping industry in Iowa, we were laughed at. What is the beekeeping industry of Iowa, or what is the beekeeping industry of Illinois? We are losing in Iowa annually four hundred thousand dollars by poor wintering, and that is one item. Now, our industry in that state at the present time constitutes 178,000 colonies of bees, as near as we can figure out, worth at least ten dollars a colony, almost two million dollars. We have great industries worth two million dollars. When we go to the merchant and ask for support, we are asking for the support of a two million dollar industry, we are not asking for the support of beekeeping We know there is something there, then; we can put it to them in clean figures.

MR. DADANT.—That is right.

MR. PADDOCK.—We produce in Iowa the same as you do in Illinois. The 1919 crop of honey in Iowa, put in ten-pound buckets, placed end to end, would cover the distance from Springfield to St. Louis and back again, so there is really something to it every year, and the honey this year was worth over two and a half million dollars, and it was right along those lines that we worked, and successfully, in Texas, to secure support for our industry and get the money needed to carry on investigations. There was no one to put the facts to them. After the facts were put to them, they were willing to admit there was something there to protect and support was given, and I think it behooves the beekeepers of every state to put the industry before the people in a proper manner, especially manufacturers, because that is where your money comes from. You are taxpayers and entitled to support for the development of your industry and I am sure if you can as an association get together this information, and I am satisfied if you start working next year, that you will have your campaign well outlined a year from then, and you will appreciate it takes a year at least to get a campaign under way.

A MEMBER.—What would be the value of the produce of the United States for one year?

MR. PADDOCK.—I can't give you that.

MR. STONE.—You say Iowa was two million?

MR. PADDOCK.—It was two hundred million pounds.

MR. KILDOW.—I want to ask if you have any such figures as that for Illinois?

THE PRESIDENT.—I have tried to obtain them several times, but I have never been able to obtain them.

MR. KILDOW.—That is what I wanted to ask, how do you get those figures from Iowa?

MR. PADDOCK.—The census put out a publication, and unfortunately it is practically out of print. It is a wonderful publication, and they had, up to 1917, a wealth of information.

THE PRESIDENT.—That is the United States census?

MR. PADDOCK.—Yes, the United States census. That is based upon the colonies of today, that they make at least four times a year. The Crop Reporter, which just came to my desk yesterday, had the fall conditions of every state, the surplus honey for the year, and the percentage condition of the colonies, and the percentage condition of the honey plants, and it is based upon those individual reports and brought together in this one bulletin. The average production given in this report does not boost the figures. They do not want to boost them. The census report out yesterday gave Iowa 95 or 97 pounds average per colony, for 1919.

MR. KILDOW.—The Illinois average is forty-seven and six-tenths, I think.

MR. PADDOCK.—Our report for 1918 was down about, to forty-six pounds, so that these figures are available in that one publication, based upon the percentage of increase or decrease from 1917.

MR. KILDOW.—The reason I asked that question, it seems we can't get anything in here in Illinois, only from the assessors, and I don't think that comes half-way up to the number of colonies we have in Illinois.

MR. PADDOCK.—When Dr. Phillips was in Texas I had the pleasure of working with him, and he said this 1920 census was to include much more definite information concerning the beekeeping people, and he asked the Texas association as an association to give publicity to that effect and to urge the cooperation of all individual beekeepers to assist the census takers in making it worth while, and I am satisfied that although you have not got a direct appeal from Dr. Phillips, if you could do anything along that line it would help.

MR. WILLIAMS.—At our little meeting a year ago, at St. Joe. the number of colonies represented as being owned by the people there was something like twenty-four hundred, if I remember. That was just a little local place in Illinois. Now, in regard to these crop estimates that are furnished by the government, they are very far from accurate and I happened to furnish the one, I think, from Pekin and that vicinity, and I am sure there is not one-tenth of the bees that are in that locality that are reported on at all. In the first place, the government does not know who own bees. In the second place, a great many people get those inquiries and never answer them at all. There is one man in my locality who has over one hundred colonies of bees. He never attends a meeting and he doesn't take a paper, and I am sure he furnishes no report. Year before last, he produced over five hundred cases of comb honey. His name is Degraw, maybe you know him.

Somebody said here today, "Is there anybody that makes a living off of bees?" There is one instance. He has no other sources of income except his bees, and this time of the year he puts his feet up on the stove and smokes a cigar and lives a good deal more contented than some other people do.

MR. ELGES.—Mr. Chairman, our new census will reveal the number of colonies of bees in the United States, together with the amount of honey they have produced this year, and also the amount of wax. Every farmer will be asked the question how many bees he has.

THE PRESIDENT.—That is true, but the man in the city will not be asked, and there are a number of beekeepers in villages and towns.

MR. PADDOCK.—That is the point Dr. Phillips brought out.

THE PRESIDENT.—We would like to have a report from the fair ground committee, that is the exhibition committee. I believe Mr. Kildow has that report.

MR. KILDOW.—I will give you a little verbal report, because we didn't write anything down. There were a good many of you there to see what we were doing. You probably know that last year, being a poor honey year, we had no extractor on the ground. We couldn't get the combs to extract, but the other part of it, the educational feature, was carried on the same as before, and I think you will agree that it has been a source of information to a good many people that come to the fair, just the little information we could give them. Some would ask for information, others wouldn't, but all those that wanted information got the best we had, and it helped lots of them, because we have had people say since then that it was a world of good to them. I think this ought to be continued in the fair ground, because we can get people to come there when we can't get them in any other way, and they will get together and ask questions and get information that they will never get in any other way. I think these things ought to be continued, it is a source of education.

MR. STONE.—Mr. President, I move that report be accepted and the committee continued.

MR. WILLIAMS.—Second the motion.

THE PRESIDENT.—It has been moved and seconded that the report of the committee be accepted and the committee continued. Those in favor signify it by the usual sign. Carried. So ordered.

MR. BENDER.—I would like to ask what that committee is supposed to do, what their duty is.

THE PRESIDENT.—That is the committee that arranges for the exhibit, and places the exhibit of the State Association, and sees that there is someone there to take care of it.

SECRETARY STONE.—Will the president name the committee?

THE PRESIDENT.—He will not name the committee till the new president is elected.

SECRETARY STONE.—The motion was to continue that committee, not the same men, that is right.

THE PRESIDENT.—Is there anything else before we proceed with the election of officers? If not, we will now proceed to election of officers. I will appoint as tellers Mr. Kildow and Mr. Dadant. I will appoint as collecting teller Mr. Bender. Nominations for president are now in order.

MR. BENDER.—I nominate Dr. Baxter of Springfield.

MR. STONE.—I second the motion.

MR. WILLIAMS.—I move the nominations be closed for president.

MR. TYLER.—Second the motion.

(Vice President Tyler acted as Chairman.)

CHAIRMAN TYLER.—It has been moved and seconded that the nomination be closed for president. All in favor of the nomination being closed signify it by saying aye.

(The motion was unanimously carried.)

MR. WILLIAMS.—Mr. Chairman, I move that the secretary be instructed to cast the ballot of the association for president.

MR. STEWART.—Second the motion.

CHAIRMAN TYLER.—It has been moved and seconded that the secretary cast the ballot of the association for the president. All in favor say aye.

(The motion was unanimously carried.)

SECRETARY STONE.—For president for 1920, Doctor A. C. Baxter, of Springfield.

(Dr. Baxter resumed the chair.)

THE PRESIDENT.—I appreciate this honor of re-election to this position. It has been my endeavor, while president of this association, to at least try to put the Illinois Beekeepers' Association, as commonly said, "on the map." We have succeeded somewhat, but not to the extent I have wished. There is a great deal to be done, as you have heard through this meeting, for the beekeeping industry of the State of Illinois, and it is only with the cooperation of the beekeepers of the State that we can succeed. We can't do it by ourselves, although we may be very faithful and endeavor very hard to do so.

MR. TYLER.—I think as an association we owe Dr. Baxter a vote of thanks for what he has done for the association in the past. Will somebody make a motion to that effect?

THE PRESIDENT.—I think it is thoroughly understood that they appreciate all efforts. The next in order is the election of vice presidents. Nominations are in order. I might say that the first vice president at this time is Mr. A. O. Heinzel, who has moved, it is my understanding, to Texas, Mr. G. M. Withrow is second vice president, third vice president, Aaron Coppin, fourth, Harry L. King, and S. A. Tyler is the fifth.

MR. KILDOW.—I suggest we write five names down.

THE PRESIDENT.—Yes, the thing to do with the nominations is to write five names on your ballot, and the man getting the highest number of votes will be first vice president, and so on down the line.

MR. WITHROW.—I will nominate Mr. Coppin. (Seconded.)

MR. KILDOW.—I will nominate Mr. Williams. (Seconded.)

MR. BENDER.—Are we to have five?

THE PRESIDENT.—Yes.

MR. WILLIAMS.—I nominate Mr. King. (Seconded.)

MR. KILDOW.—Mr. President, I move we call those five names elected as vice president.

MR. TYLER.—I second the motion.

THE PRESIDENT.—We only have five nominations. It has been moved and seconded that the members nominated be elected, that the secretary cast the unanimous vote for the names nominated, in the order in which nominated, for vice president: Withrow, Coppin, Williams, Bender, King. All in favor signify it by the usual sign.

(The motion was unanimously carried.)

SECRETARY STONE.—Mr. President, I hereby cast the ballot for the five vice presidents in regular order, Mr. Withrow first, Mr. Coppin second, Mr. Williams third, Mr. Bender fourth, Mr. King, fifth. Is that right?

THE PRESIDENT.—That is the way I have it. I therefore declare these men elected for the position of vice presidents in the order in which named. The next is the election of secretary. Nominations are in order.

MR. SEASTREAM.—I nominate Mr. Stone. (Seconded.)

THE PRESIDENT.—Are there any other nominations?

The following were nominated: Williams, Withrow, King, Stone.

THE PRESIDENT.—While you are preparing your ballots I will name the State Fair Committee: Mr. Kildow, Mr. King and Mr. Withrow.

(A ballot for secretary was taken, and Mr. Withrow elected.)

THE PRESIDENT.—Mr. Withrow having received a majority of the votes cast for the office of secretary, I declare him elected to that office.

MR. STONE.—I am the free-est man I have been for years.

MR. WITHROW.—I am grateful for the honor, and I will try to do the best I can.. The thing for me to do now, is to resign from the vice presidency.

THE PRESIDENT.—We will accept your resignation, if that is the concensus of the association. It will be necessary to elect another man to the office of vice president.

MR. DADANT.—Mr. Chairman, since our Brother Stone has been the secretary for twenty-nine years, I think he should be on the list of officers, and I nominate him, and I hope you will all vote for him.

(Seconded.) I make a motion that the secretary cast the unanimous vote for Mr. Stone as first vice president. (Seconded.)

THE PRESIDENT.—It has been moved and seconded that the secretary cast the unanimous vote for Mr. Stone, as first vice president. Those in favor will say aye, contrary, no. The motion is unanimously carried.

MR. KILDOW.—I move you that this convention make Brother Stone an honorary member of this association for life, without dues. (Seconded.)

THE PRESIDENT.—It has been moved and seconded that Mr. James A. Stone be elected to honorary life membership in this association. All in favor signify it by the usual sign.

(The motion was unanimously carried.)

MR. STONE.—I thank you.

SECRETARY WITHROW.—I hereby cast the unanimous ballot of the convention for first vice president of the association.

THE PRESIDENT.—Mr. James A. Stone, having received the unanimous vote of all for first vice president, I declare him elected to this position. The next in order is the election of treasurer.

MR. BENDER.—Mr. President, I nominate George Seastream. (Seconded.)

MR. DADANT.—Mr. President, I move you that the vote of the association for Mr. Seastream as treasurer be cast by the secretary.

SECRETARY WITHROW.—I cast the ballot of the association for treasurer for 1920, George Seastream.

MR. SEASTREAM.—Thank you very much for the honor of being elected to the same old job. (Laughter.)

THE PRESIDENT.—Mr. Seastream having received the unanimous vote of the association, I declare him elected to the office of treasurer.

MR. LLOYD.—Mr. Chairman, I noticed in a number of colonies I have been looking after, a peculiar, decided odor which I thought was foul brood, but in looking over them I found no foul brood whatever, last year, and this year the same colonies are in the same condition. I would like some information as to what that odor might be. It wasn't foul brood, because I looked after the two colonies fine.

THE PRESIDENT.—What time of the year was this odor?

MR. LLOYD.—The latter part of August and the first week in September.

A MEMBER.—What did it smell like?

MR. LLOYD.—Not exactly like foul brood. It smelled more like a pigsty than anything else. I thought it was aster bloom, but I wasn't sure.

MR. KILDOW.—Aster bloom has a very peculiar odor.

MR. LLOYD.—I wanted to know what it was, so that if I came across it again I wouldn't be worried.

THE PRESIDENT.—It was probably due to the evaporation of the nectar, probably either aster or heart's ease.

MR. BENDER.—Your theory suggested heart's ease honey as having an offensive smell. It has been found that smartweed will give a peculiar smell, it makes the air stale, while the astor honey smell is more decisive.

MR. LLOYD.—When they took to the field where there was aster, I noticed that smell came in only two colonies, not in the balance of the colonies.

MR. DADANT.—My suggestion is that it was buckwheat. If there is buckwheat growing they would get it from that. I read not long ago that buckwheat has such an offensive smell that they thought something was dead. It doesn't have that smell to me. I was raised in the country where they make gingerbread out of honey, and I don't think it is offensive. We are sometimes mistaken on smells. I had a poor opinion of buckwheat. This year in August I went to where our boys had taken the bees, and there were a thousand acres in one field, of buckwheat, and I could compare that to nothing but an orange blossom odor. I was very much astonished to find the smell of buckwheat in a large field so much better than it was here and there in blossom. I don't think we ought to condemn plants till we are better informed. In 1884 I sold a carload of honey in the east where nobody had any honey, and the only specification was that there should be no buckwheat honey.

MR. KILDOW.—There is just one thing that I would like to bring up before we close. I received a letter here some time ago from the vice president of the National Beekeepers' Association, asking us to send a delegate to the delegate meeting of the National at Kansas City, I think it is this next month, January 6. I think it is important for us to send a delegate there if we can instruct him as to about what idea we have, as to what the national organization should be. They may amend their constitution or throw it out and organize a new one, and we ought to send somebody down there that will help in this.

MR. BENDER.—My idea of it is different from Mr. Kildow's idea. I doubt whether a delegate from this association can have any possible influence on that convention, and I don't see how it can concern us in any wise what they do.

MR. DADANT.—Mr. Chairman, that is one thing on which I can't agree with Mr. Bender. If the national is anything, it is composed of different states. I agree with him, however, in saying that it is doubtful. This is such an immense country that it is very difficult to organize an association on the cooperation plan. I had a little experience with that in 1903 or 1904. I went to California, and the Californians who were ready for organization wanted to organize the entire United States, and I was put on a committee of three. There was one man from the west, one man from the east, and the man from the central part was

myself. We started to organize, but we had no money, no means of organizing anything, we had no material from which we could get up a stock company of any kind. California had honey but in Illinois I couldn't have found a carload of honey to put together unless I had spent two or three months in getting it together, and the California man was angry at the other two because they were ready and they expected us to be ready to start in. So to me it is very doubtful what we can do, but it seems to me a State as important as Illinois should be represented in a national meeting, whether they do any good or not. We are really a better established institution than any other, because we have funds from the State, and it seems to me it would be legitimate to spend a part of the State funds in a delegation to a national convention, but that of course could be threshed out afterwards.

MR. PADDOCK.—I am rather an outsider here, but there is one viewpoint people must get. That is because a thing doesn't look good on the surface, you are not going to try to make it go by staying out. We don't know what that may amount to, but unless you get in and get your feet wet you are going to be an outsider. I was in Texas at the time they undertook this proposition, and they are coming up there to do something, and I know other states that are going to be there to do something, just what we don't know, but I think for self-respect that Illinois should be represented there, whether it is good, bad or indifferent as a result. I don't see how an organization of this standing can afford to pass up that proposition to be represented there. That is the way it looks to me. If something does happen and then you have got some kick coming, you have no alibi, you were not represented, and Professor Kindig made it very positive that every delegate ought to have credentials. Don't overlook that. He has written me the third time about it.

MR. KILDOW.—It seems very evident that there will be something done at Kansas City. They are not satisfied with the old association, it is not meeting with the approval of the beekeepers throughout the country. This body is delegated for the purpose of threshing out things and seeing if they can't organize to fit their purpose. It seems to me Illinois ought not sit down and let the other fellow go ahead. There may be some things we would like to have incorporated if they change it or make it a new corporation. I think we ought to go down, and if we can't get what we think is right we can stay out. But if there is something there we can put in that will help Illinois, better do it. Of course the expense will have to be defrayed.

THE PRESIDENT.—We can take the expense of the delegate out of our own individual fund.

MR. KILDOW.—Yes, I believe we have got in the neighborhood of five hundred dollars, and it looks to me like we ought to do something. We ought to all be interested in this.

MR. STEWART.—Mr. Kildow, is there any reason why the national should exist?

MR. KILDOW.—I don't know whether there is or not. That is according to what each individual thinks about that.

MR. DADANT.—Our friend Mr. Stewart comes with his usual criticism. That is all right, we need criticism and he is the man that does it, but I believe it is not very difficult to answer that question. Is it necessary for the states of the Union to be a United States? I think that will answer the question.

THE PRESIDENT.—Personally, I think we ought to send a delegate out there.

MR. TYLER.—How many delegates are we entitled to?

THE PRESIDENTS.—One. We are not affiliated at present with the national in any way.

SECRETARY STONE.—If there are nominations to be made, I would nominate Dr. Baxter. He is one of the directors of the national.

THE PRESIDENT.—I would prefer that you send a man that has had a little experience in the reorganization of those societies. He knows its faults. I think Mr. Dadant should be the man. I will be there, but I will go on the executive committee of the present national.

MR. KILDOW.—I will nominate C. P. Dadant to be our delegate.

MR. TYLER.—Second the motion.

MR. DADANT.—I believe it is better for you to send a man who has had less experience than I, for I don't want to make a fool of myself again. (Laughter.)

THE PRESIDENT.—Any other nominations?

MR. WILLIAMS.—I second the motion that Mr. Dadant goes.

MR. DADANT.—There is another reason. We ought to keep the private institutions who can have any influence on the beekeepers, out. There is always a chance for complaining that Mr. So and So is interested personally in anything, and if he is an outsider, then he is without blemish.

MR. BENDER.—I think Mr. Dadant is right about that. While Mr. Dadant has never been accused, I think he is wise to take the position he does, while he would make a good delegate. For that reason I am in favor of Dr. Baxter as our delegate.

THE PRESIDENT.—Mr. Stone, you will have to do the talking, you are the first vice president.

(Mr. Stone acted as temporary chairman.)

CHAIRMAN STONE.—Is Mr. Dadant's nomination withdrawn.

MR. KILDOW.—Yes, I will withdraw that.

CHAIRMAN STONE.—The motion is that Dr. Baxter be the delegate to the Kansas City National Beekeepers' Convention. All in favor of that motion will signify it by saying aye, opposed no. The motion is unanimously carried. The ayes have it, Dr. Baxter is the delegate.

(Dr. Baxter resumed the chair.)

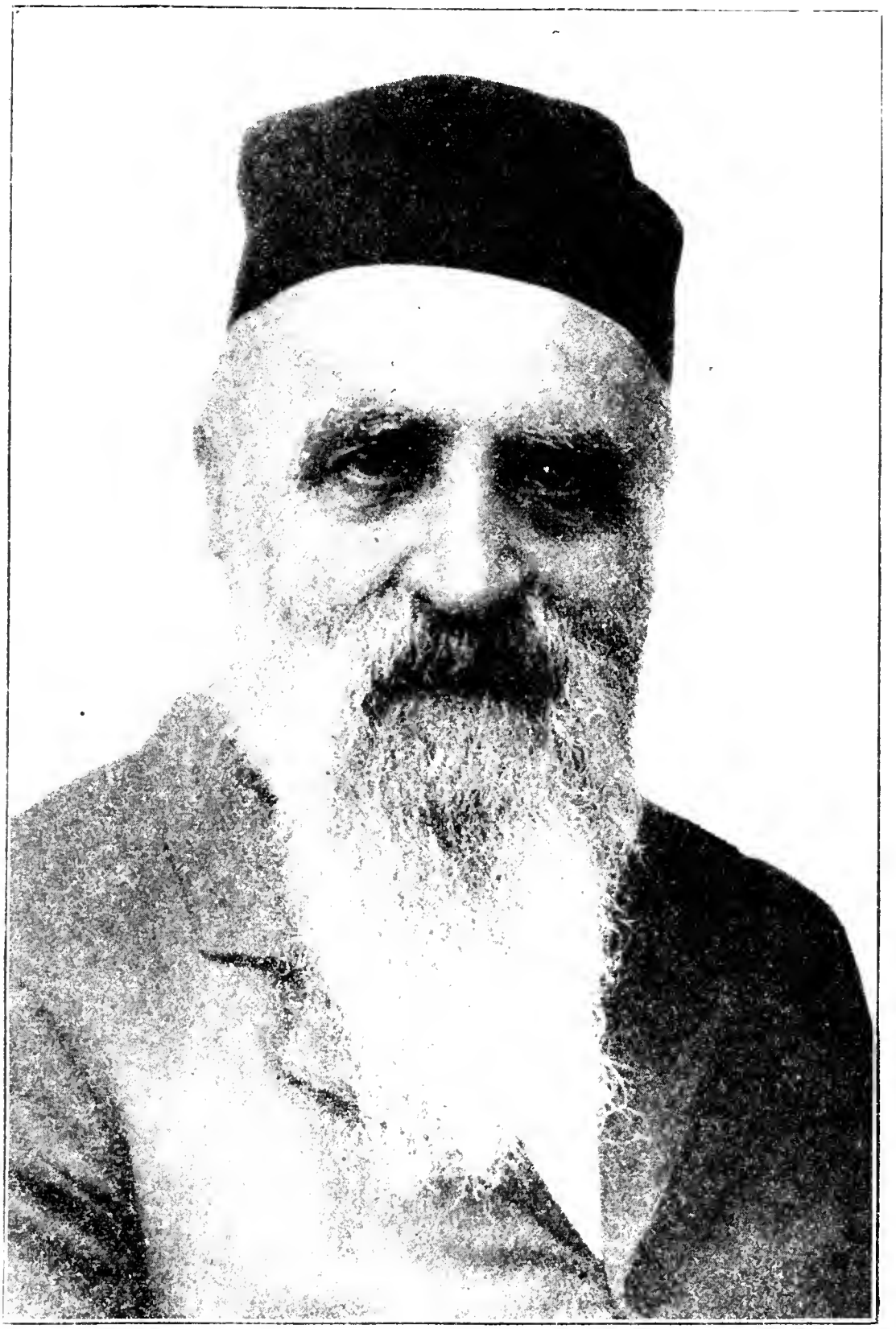
THE PRESIDENT.—Is there any further business? If not, a motion to adjourn will be in order.

MR. WILLIAMS.—Mr. President, I move we adjourn.

MR. TYLER.—Second the motion.

THE PRESIDENT.—It is moved and seconded that we adjourn. All in favor signify it by the usual sign, contrary no. The meeting is adjourned.

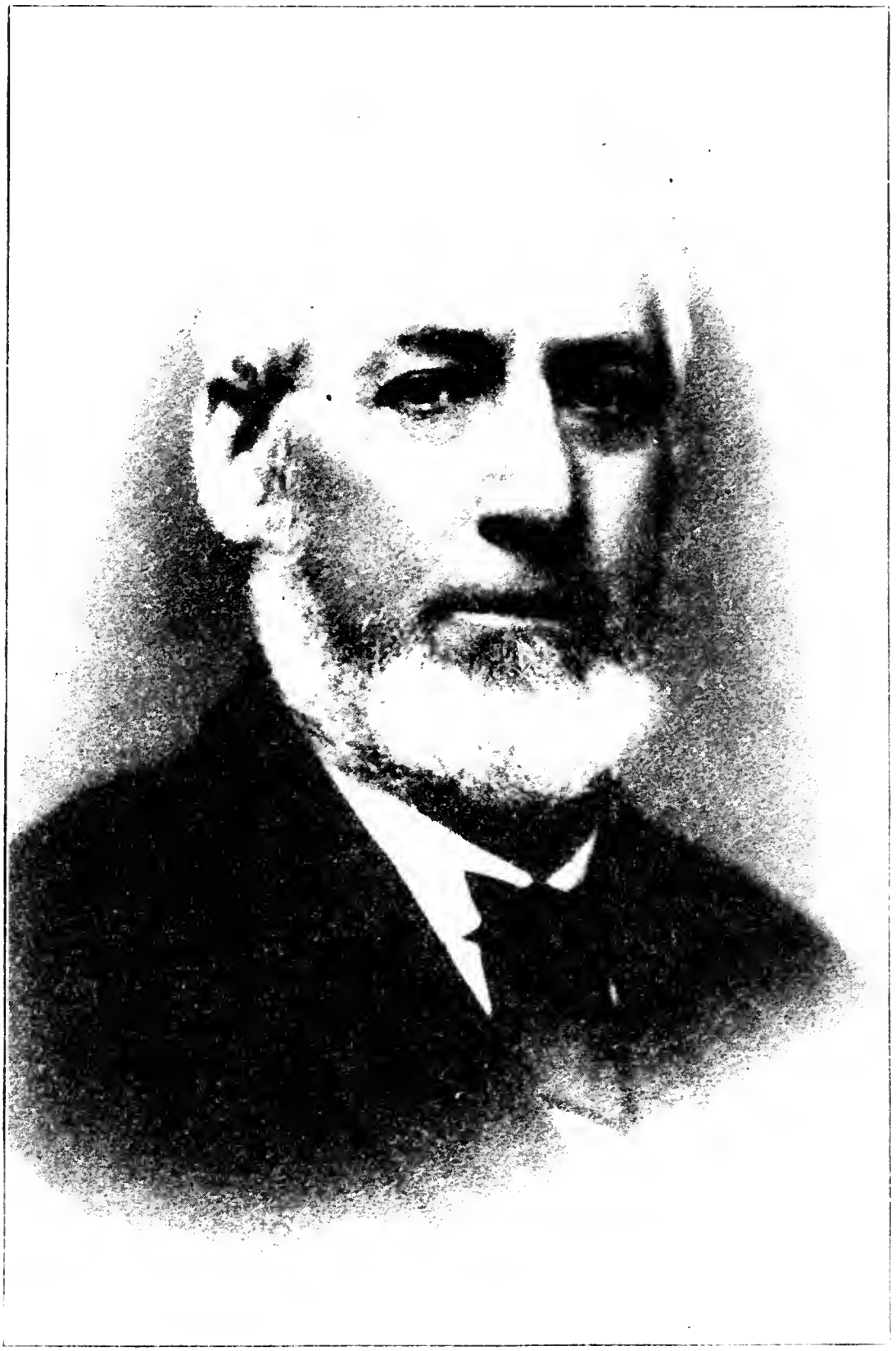
Whereupon adjournment was taken *sine die*.



CHARLES DADANT,

1817—1902

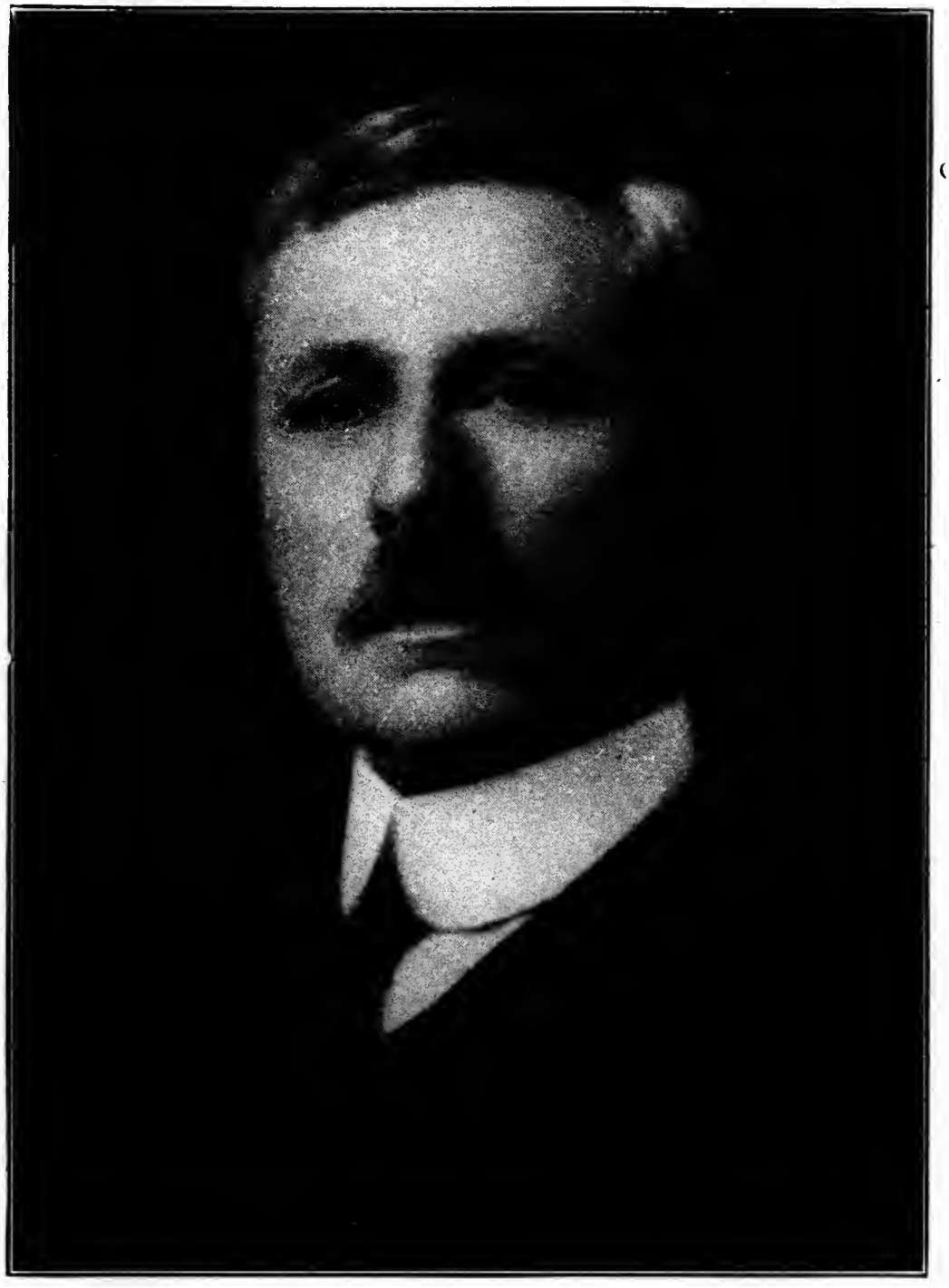
The first to lay down rules for the safe transportation of queen bees across the sea.



MOSES QUINBY,

1810—1875

"Father of Practical Commercial Beekeeping in America," inventor of Bee-smoker.



E. S. MILLER,
President, Chicago-Northwestern Beekeepers' Association.

PROCEEDINGS

of the

TWENTY-THIRD ANNUAL CONVENTION

of

Chicago-Northwestern Beekeepers' Association

held at

Chicago, Ill., in the Rose Room of the Great Northern Hotel

December 15 and 16, 1919

JOHN C. BULL,
Secretary, Chicago-Northwestern Bee-keepers' Association.

PROCEEDINGS OF THE CHICAGO-NORTHWESTERN BEEKEEPERS' ASSOCIATION.

President, Mr. E. S. Miller, Valparaiso, Indiana.
Secretary-Treasurer, Mr. John C. Bull, Valparaiso, Indiana.
Vice President, Mr. Edward Hassinger, Jr., Greenville, Wisconsin.

The convention was called to order by the president at the appointed time and the minutes of the previous meeting were read and approved.

The report of the secretary-treasurer showed the following:

Cash on hand at the beginning of the year	$ 62.02
Receipts during the year	132.00
Total	$194.02
Expenses for the year	120.59
Cash on hand	$73.43

Mr. Bull, the chairman of the fair price committee, reported as follows: We did this last year about the same as we have done in the two previous years. This year we mailed out one letter in August. The prices are practically the same now as they were then, so we haven't mailed any further letters. The prices have been running just about the same.

There is considerable western honey coming in now, that has pulled prices down a little, but the eastern honey is holding up about the same all the way through. We mailed around nine hundred letters in August, and since then I have added around one hundred names, so we have about a thousand on the mailing list now. I might say in addition that I have some blanks here, and if you will fill them out with the names of any beekeepers in your vicinity, I shall be glad to have them. We have to keep adding to this mailing list, if we don't, it will become dead in a few years. We must keep a live list if we want to get any good out of it, and keep adding to it all the time.

Upon motion of Mr. Wheeler, the report was accepted.

Mr. Dadant, Mr. Rettig and Mrs. Hammett were appointed as auditing committee. Present marketing conditions were then taken up for discussion, and Mr. L. C. Dadant being called for, responded.

Mr. President, I do not know that I can give you very much information. Some of these people around here who handle honey in large

quantities might be able to do better than I can. We produce a great deal of honey and buy some on the open market, but not a great deal, and I find from the little information I have been able to gather, that honey is holding its own pretty well, especially in the eastern and central states. California honey, I noticed, went off about a half a cent a pound last week, white sage and orange honey being held at twenty cents per pound, f. o. b. Coast was quoted at 19, a change in two weeks. Of course, that is still a pretty good price, yet nineteen cents f. o. b. the Coast means one and one-half cents added to it before delivery in Chicago or New York, which would mean twenty and one-half cents in carload lots, wholesale. Northern honey I think, anything that can be called a good grade of clover has been all sold. I don't think anybody will disagree with that, but in the west, especially in California, they still have considerable honey, compared with what we move in this part of the country, but it is not a great deal compared to what they have moved already. I think there is no doubt but that the market will clean up before the next crop comes on. I think the price of sugar is having a great deal to do with it. I bought some sugar the other day, in town, and it was worth sixteen cents a pound, and the grocer told me that the next would be eighteen cents, and the next probably twenty-one cents a pound. So with sugar as high as it is we ought'n't to worry about honey. Then you can't get it. I think that is one of the things that is going to keep up the price of honey, the scarcity and shortage of sugar. There is no doubt that the baking industries and the candy industries have protected themselves pretty well with a supply of sugar, but the question is now whether they are going to be able to do that in the future, because everybody seems to have his eyes pretty well opened as to what the sugar business amounts to, and if they are not able to protect themselves, they will have to buy honey, and of course that means better prices for our product.

Personally, I do not want to see honey get much higher than it is, unless sugar goes very much higher. I think that last year when bee-keepers got as high as thirty cents a pound for honey wholesale, that more harm was done with the honey industry than good. I do not say it was too much for honey, but people aren't used to paying those high prices for honey and they consider it as a substitute. They were not educated to the use of honey, and when they saw it go so high, they said we were profiteering. If it had staid ten cents lower people would have said, "We can get honey at a reasonable price, and we will use it," and it would have encouraged them to do that. As it was, they discarded its use, and there was absolutely no demand for honey after the armistice was signed, or very soon after that. I do not say that thirty cents a pound was too high for honey, but I do say that it was too high for that time, because people were not prepared to buy it at the price that the retailer would have to put on it when he paid thirty cents a pound for

it wholesale, but with present market conditions I think honey is going to stay up unless we have a crisis of some kind, which I hope won't come.

THE PRESIDENT.—We would like to have this subject fully discussed. I am not acquainted with all the members here, but I think some of our Chicago people are here who are selling on the market retail. You should be able to give us some points in regard to that.

MR. B. W. BROWN.—I am selling honey in ten-pound pails at three dollars and forty cents. That is a little higher than the committee recommended. I charge one dollar and seventy-five cents in five-pound pails and three dollars and forty cents for ten-pound pails. It seemed to me that in your recommendation there was a little too much difference between the two prices.

MR. KANNENBERG.—Mr. President, we have got a man in our vicinity who came from Idaho, and they brought honey along by the carload, and he puts it up in cans, two and a half and five pound cans. He sells the five pound can for two dollars and twenty-five cents, and the two and one-half pound can for one dollar and thirty-five cents. He is getting more money for his honey than ever. It is advertised, and people go in and buy it, too. I saw a fellow who bought it, and he said, "That honey don't taste good, at all." I said, "What kind of honey is it?" He said, "I don't know. It looks dark, so it must be no white clover honey." I have not tasted it, but I am going to buy a can and see what it is. I have been selling my honey at about the price regulated by the committee; that is, for the white honey one dollar and seventy-five cents for a five-pound pail delivered in town or f. o. b. to be shipped out, and three dollars and twenty-five cents for the ten-pound pail, that is for single pails. For one-half dozen or a dozen pails sold in one lot they come correspondingly cheaper. I make a difference because a great many people that ordered honey, especially to be sent over here to Chicago and suburbs, buy enough for themselves and their friends, and you can make it an inducement for them to buy in dozen pail lots and they can cover their own expenses and perhaps make a little profit. Occasionally parties buying a dozen pails in a few weeks they will buy another dozen and take altogether a considerable quantity. I have a good mail order trade. I can see very little difference in the market this year and what it was last year. We are selling about the same quantity, and the prices I am asking are a little bit higher than they were last year. Maybe there are several others here in the audience, who sell honey around Chicago in a retail way. We would like to hear from you.

MR. TEUTEMACHER.—I have sold some, and I sold it at the price recommended, and one party came around again and asked for the price, and I told him. He was one of the automobile people going by. He told me that last year he had bought honey for twenty-six cents a pound in the south. I told him that I sold it at that price, too, last year. He

said, "It don't cost any more to feed the bees this year than last, does it," I said, "Yes, it does. If I sell my honey at the old price and go into the store, everything else has gone up, I can't get as much for my money as I did last year." He said, "I guess you are right about that." Another party from Iowa came around and asked the price. I told him, and he said, "I can buy honey for fifteen cents a pound." That condition ought not to exist.

MR. J. R. WOOLDRIDGE.—Mr. President, in my neighborhood honey is moving nicely at forty-five cents a jar. We put it up in pound jars, sixteen ounces, net, and it is moving nicely at that price. We also have a four ounce bottle that we supply some of the stores with. We get fifteen cents for that, then we get twenty cents for six and a half ounces. We have a good many repeat orders. Nobody complains about the price, no wrangling about it at all. It is sold in the stores for sixty cents, so they see the advantage of buying direct from us. We have lots of duplicate orders and no complaints. Of course, we produce our own honey.

THE PRESIDENT.—Honey put up in small packages, of course, is worth more per pound. It costs for the glass or container, and the cost will have to be added to the price of the honey. If honey is worth thirty cents a pound in pails, it ought to be worth forty-five cents in a glass container, I should think.

MR. WOOLDRIDGE.—Yes, the glass and wrapper costs seven cents.

A MEMBER.—What do the five pound pails cost?

THE PRESIDENT.—I think about eight cents, the last I bought I believe were eight cents. I notice in my town that the A. I. Root Company sells the Airline honey, a fourteen-ounce jar, at fifty cents. I do not know what the storekeeper pays for it, they wouldn't tell me. The selling price of honey seems to vary a great deal. The price committee that this association has had for a number of years has a tendency to get us nearer together on those prices, which seems to me important. They were telling me not long ago that honey was selling on South Water Street for seventeen cents a pound, white honey from the west. I suppose the commission men probably got it for less than that. People that will sell first-class white honey for seventeen cents a pound ought to be educated along the line of prices, and that is what our committee is endeavoring to do. If we could just get in touch with all these fellows that have large quantities of honey to sell, but it seems oftentimes the beekeeper who produces a considerable quantity of honey does not come to our bee meetings and often does not read the bee journals or price quotations, and consequently sells to the first buyer that comes along. Those are the people we ought to get hold of in some way.

MR. FRANK SOPHER.—Mr. President, I suppose I have run against as many different prices of honey as any man in this room, and maybe more, and it has been selling all the way from fifty cents a quart to a

dollar and a half. There is a man by the name of Miller south of here some place, in Dalton Park, who charges a dollar and a half a quart and two dollars and twenty-five cents for five pounds. I didn't run across any ten pounds that he had sold. I came across an old German woman over here who had bought a five-pound package in a store. The storekeeper wouldn't say where he got it. I had my honey and a woman came along to get some. "I would like it if it is honey," she says. I said, "If it isn't honey I will give it to you." She said, "Bring me in a pail." I took her a pail. She looked at it and said, "That is all right." "Now," she said, "I will show you something. I bought this from Mr. So-and-So," and she brought it out for me to see. It was granulated, all solid. She said, "What is that?" "Well," I said, "I should think by the looks of that and by the taste of it, that it is buckwheat." "No," she said, "That is brown sugar." I said, "I don't believe it." I couldn't believe it. I said, "I believe I can prove it to you. If you will give me a little hot water I will bring it back and show you." She didn't know anything about that, so she got a little hot water. I put it in the water and it came back, but it was very strong. She said, "I know what I will do. I think that I will put it out in the alley." I said to her, "I don't think it would be well to do that, there might somebody have some bees around here. I would put it in fire or bury it. If you leave it in the alley you will make some other fellow's bees sick." But no, she said she would throw it out, and I said, "Give it to me, then." No, she wouldn't do that. I said to bury it then. Finally she buried it. That settles that part of it with the man who sold that honey, over in that part of the world. She had paid him for it already. I think she paid $2.50 for that little package, whatever it was.

Then there is another party here who has just flooded the south side ever since about the first of September. He must have had twenty-five or thirty men selling honey all over the south side. I found a lot of them that have bought honey from them. It was nice honey, and he got a big price for it. They had a big truck and would deliver it. It is some man, I suppose, like that fellow that brought in a carload of western honey, no doubt it is the same fellow. The name is on the pail, but some of the pails didn't have any name on either. They sold the honey for whatever they could get. If they could get a dollar and a half they got it, if not, they would take fifty or seventy-five cents, just whatever they could get.

I find these things out, and it isn't you fellows raising honey out in the country, by the carload, but it is this fellow if he can get a dollar all right, or a dollar and a half or fifty cents. Those are the fellows that raise the dickens with us fellows here that are trying to sell it at a reasonable price. I haven't sold pail honey this fall for less than a dollar and a quarter and deliver it wherever they want it. You can go to the stores out in the country and you will find that you can buy nice honey

in five pound pails for a dollar and sixty-five cents. A man can put in ten or twelve or twenty pails of honey in a store, and the storekeeper will sell it for a dollar and sixty-five cents. Any of you fellows can go out there, who live in Chicago, and get a pail of honey for a dollar and sixty-five cents, and when you can do that you would be a fool to pay me two dollars and twenty-five cents for it. You say you are charging too much for that honey, what are you going to do, we all have to live. Then go out in the country and live there. I have sold a good many pails of honey this fall so far, and will sell more this winter, but I am going to sell only nice honey. That is the main thing. The nicer it is the better you can sell it, and you are never ashamed to go back to the same women again and sell them another pail, but try to get a level price on it anywhere; get a good price on it and keep it.

THE PRESIDENT.—The question arises in my mind, shall we make a difference in the price of dark honey of good quality and light honey of good quality. We find that some consumers prefer the dark honey. They wouldn't have the light honey. Others prefer a white honey. Shall we make a difference in price? I find that the majority prefer the white honey. What do you say about that?

MR. SOPHER.—I was out in the country last Saturday and I had one hundred and fifty pounds of wild honey. A woman said to me, I want a pail of honey but I want it strong. I says, "What is the idea?" That was what she liked, it was her idea of a good honey. I told her I couldn't give it to her, but I happened to think I was going out in the country and I told her if I could get it I would get some and bring it back to her. I tried to get it but I couldn't. I tried to get a pail off of Fred but Fred didn't have any. I told him I would like to get hold of a strong pail of honey for that woman, and I would still like to get it. She is so positive sure that she wants strong honey, that I want to satisfy her.

A MEMBER.—Get some honey-dew for her.

MR. SOPHER.—So, Mr. Miller, if you have got a pail of real strong honey, send it over to me.

THE PRESIDENT.—I have got it.

MR. WOOLDRIDGE.—I might say our sales run about half and half. Some weeks we are ahead on the amber and sometimes it is a little different, but it is pretty well equalized with us, and ours is a pretty good sample, for the reason that the majority of them are repeat orders, so that they make it about half and half.

THE PRESIDENT.—Do you make a difference in the price?

MR. WOOLDRIDGE.—No, sir. Both are good and it is a matter of taste. It is of good quality, both amber and clover.

QUESTION.—You tell your customers, then, that you have two kinds of honey?

MR. WOOLDRIDGE.—Yes, sir. We sell honey from the sample.

THE PRESIDENT.—I would like to ask Mr. Dadant if he makes a difference in the price of light and dark honey?

MR. DADANT.—In ordinary seasons, no. We sell our dark honey for the same price as we do the light, but this year we have had to buy what light honey we have sold, and we have put a little higher price on it, two cents a pound only, as the difference between the dark and the light. This was done to get them to take the dark, because we had more of it, and we have many customers who will not use anything but fall honey and they would rather pay more for it than for the white, so we figure we can get just as much for the dark as for the light. The western honeys you can't rely on, on the dark honeys. They are not good table honey. That kind of honey doesn't command as good a price as the other.

THE PRESIDENT.—It is not advisable to put that on the market.

MR. DADANT.—If we tried to put our dark honey on the market we would have to take five cents a pound less, but by selling the dark to the consumer we can get the same price. We have people working for us who will take it, when we make them a little less price.

MR. WINTER.—Just for the benefit of you Chicago retailers here, I want to tell you how to get rid of your honey. I have been handling honey for the last eight years around here, and I have sold all the drug stores south of Twelfth Street. I have a lot of cards printed, "Try our honey sundaes." And I guess you will find them scattered all the way from Twenty-second, Forty-third, and Sixty-ninth, all over those ice cream parlors you will find "Try our honey sundaes," and every week I go around to see them and they give me an order for a gallon of honey, or two gallons, or five gallons. I get four dollars a gallon for it. If they have got any poor ice cream and they can't get rid of it, they dope it with honey over the top and they are getting twenty-five cents for it too, with three cents war tax, twenty-eight cents for your honey sundaes, and they get away with it.

MR. SMITH.—I have been handling honey for fifteen years, and light honey and dark honey doesn't mean very much to me. It seems to me as producers of honey we ought to grade our honey according to the predominating flowers that they are gathered from. The public that buys the honey will call light honeys dark and they will call dark honeys light. They do not know, it does not mean much more to them than it does to me. Some gentleman gets up here and says "light honey." I don't know what he means, except that it isn't black or it isn't amber, but I don't know what flowers it came from, and for that reason I don't know what the honey would taste like. It seems to me we ought to grade our honeys from the flowers that they come from. I have had some people call sweet clover honey a light honey and other people have called it a dark honey. I don't know whether it is light or dark.

I sell my honey in Mason jars. Fill five jars and set them up between you and the light, and no two of them will look alike. I haven't been able to overcome this difference in the glass and keep it from varying. I have got sweet clover honey in cans that look just like water, just as clear practically as water, and I have got honey that looks like Chicago River water, but it seems to me we ought to sell our honey and get a market for it, that the producer ought to have a market for his honey. If he has a sweet clover honey or a white clover honey, if he has an orange honey, give it that name, give it the name of the predominating flower that it came from.

THE PRESIDENT.—I can see one disadvantage in that, the fact that the consumer doesn't understand the source of honey. If you say sweet clover honey or white clover honey or buckwheat honey or something of that sort, only a comparatively few of them know what it means.

MR. SMITH.—But they will learn, and they will never know otherwise what they are getting. When they call for light honey they do not know whether they are getting the honey they bought before for white honey or not, and they have no way of knowing.

THE PRESIDENT.—I see the advantage in putting the honey in white glass. The fruit jar glass will give a dark color to any light colored honey. I prefer for that reason the white glass jar, of a uniform size and color. They cost possibly a little more, but you can use a smaller jar and sell it for a little more money than if you put it up in large jars.

MR. SOPHER.—Mr. President, I would like to have all you big beekeepers around the outside, within a hundred miles of Chicago, come to some price where you can depend on it. If it is going to be two dollars or a dollar and a half for five pounds, what are you going to deliver it at Chicago for? Or, if you are going to ask two dollars, make it two dollars, and don't make it one dollar and seventy-five and then have them jump all over us fellows because we are selling honey and making a different price. We drum just as much trade for you fellows in Indiana and Wisconsin as you do for yourselves, and more, because if they once get hold of your name and what you are doing, they are going to write to you for it, and if they learn how to use honey that is all the better for you, isn't it? Get the price where you are living, that helps me and it helps you too. It helps you more than it does me, because I have got all kinds of expense. By getting a price and sticking to it, that is all you have got to do. You can get two dollars and a dollar for it in Valparaiso, per pail, just as well as you can get seventy-five cents.

A MEMBER.—That has been tried a long time and it doesn't work. We can't get them to do it.

THE PRESIDENT.—It depends a good deal on the other fellow. If you ask two and a quarter for your honey and the other fellow living next door to you asks a dollar and a half, you are not going to sell very

much. The only thing is for beekeepers to get together and agree upon price.

MR. SOPHER.—That is the idea, exactly.

THE PRESIDENT.—I think a great many of us are doing that, not to raise the price so much to the consumer as to bring about a greater uniformity of price.

MR. BULL.—I might say that when you are out selling honey, nonuniformity of price has more to do with killing sales than anything else. Someone will come into a neighborhood to sell honey. Here is a block that will take one hundred pounds of honey. Someone goes in there and sells honey at thirty-five cents a pound. Somebody else comes along and he will sell it for twenty-five cents, and he will kill the other fellow's sale every time. If you go into a neighborhood that will take one hundred pounds of honey at thirty-five cents and someone comes in and sells one can at twenty-five, it will kill the sale of the other ninety-five pounds—they will do it every time.

THE PRESIDENT.—You can get it at most any price from people who do not know its value.

THE SECRETARY.—I have a letter here from a man who has four thousand pounds, and he had one of these price letters, thirty to thirty-five cents. He wants to know who would give him his price of twenty-five cents. He says he couldn't sell it at that price. He couldn't sell it at twenty-five cents in his town when it was worth thirty to fifty-five in the open market at that time.

MR. KANNENBERG.—Mr. President, we had an agent going around in my neighborhood, a man who came from Wisconsin selling honey all over. I forget exactly what the price was, but it was pretty low. I wouldn't sell it at that price. He had samples with him, and it was nice honey. I didn't take his name, but he knew everything about the Northwestern Beekeepers' Association, and everything. He said he came from Wisconsin. He said we have all over the United States the bees in different localities, and we are selling this honey all over the country. I know he was selling it cheaper than I would sell it.

QUESTION.—Did he go from house to house?

MR. KANNENBERG.—Yes, he went from house to house, too.

QUESTION.—Did he sell much?

MR. KANNENBERG.—Well, I don't know. He said he had good sales, but it was all extracted honey.

THE PRESIDENT.—Those of us who can, it would seem advisable to me to buy up the small lots being offered below the market price. But oftentimes we find people having small lots, who will not sell to us. I know of one instance, a lady living out of town. She had a few bees. She advertised in the papers for weeks: "Comb honey at fifteen cents

a pound, delivered." She would deliver a pound or two pounds. I tried to buy the whole lot at the same price and she wouldn't sell it.

If there is nothing further along this line, suppose we consider the future market of honey for the coming winter? We have been hearing a general discussion of the present market conditions. Is honey going higher or is it going to be lower? Are we going to have to sell our honey for less in a wholesale way, in a jobbing way? Can anyone enlighten us along this line?

MR. SOPHER.—All of you beekeepers can get more just as well as you can get less. All of you fellows producing honey, whether it be a ton or two tons or whether it be ten tons, all you have got to do is to ask the price, and you will never get it if you don't ask it. Do you suppose that a woman who wants a pail of honey and it is five cents a pound more this fall than it was last fall, she isn't going to have it? She will have it just the same, even if she pays ten cents more for it. She is going to get it. I have got fifty customers who would pay seventy-five cents a pound for honey if they couldn't get it any other way. I don't charge them any more now this year than I did last year, but if you ever set a price you have got to stay with it. Just as sure as you come down the party that you have sold it to will say to another customer you have been selling to, and getting the regular price, "See, I bought this honey ten cents cheaper than yours." And you need never go back to your good customer again, because they will get acquainted and your customer will find out that you have been selling it for less than you sold to her—they will become acquainted in some way, and they'll find out the difference in price (laughter). They will know one another, I have tried it and I know. If I sell this man a pail at a certain price and then sell a man over yonder at another price they will know it just as sure as I do that. I don't know how it comes, but they will find it out (laughter). The only way I can get out of it then, is to say to them, "I get the pail back from this fellow, and I don't from you." (Laughter.) I never deliver a pail of honey the second time that I do not call for the pail. If I get the pail and she is a good customer I pay her for keeping it for me.

MR. HUBER.—I think that every man that produces honey ought to go out and sell it from house to house, and then he would know something about the business. The honey business is a business like any other, and it ought to be put on that basis. But I find in getting around that there isn't the foodstuff produced that has any more demoralized prices than honey has in Chicago right now. You can buy honey all the way from seventy-five cents a quart up to a dollar and a half, and it is all honey, but there is a difference in salesmen and a difference in beemen. It will always go along that way, I suppose, because there is no way to systematize it.

THE PRESIDENT.—One difficulty with beemen and producers is that so many sell at retail, asking only wholesale prices. They will sell one pound or five pounds and ask the same price per pound as if they were selling a thousand pounds. It costs money to sell honey, to put it up in small packages, but a great many people don't understand that. They are usually the people who do not attend bee conventions.

What is the future prospect for prices of honey for this season? I think Mr. Dadant gave his views, that the tendency probably on account of sugar would be upward. Has anyone any other remark.

MR. DADANT.—Mr. President, I don't believe I intended to convey the idea that the tendency is upward. I don't believe it will go lower, but after the holidays the demand usually drops. We have found it that way, and others who handle honey find that the demand after the holidays is a little less than it is before the first of the year. I do not believe it is going down, but my personal opinion is that I do not believe it will raise in price, on account of the fact that the California market has dropped a little in price, and that there seems to be quite a little honey in the west yet.

A short recess was taken.

QUESTION BOX.

THE PRESIDENT.—I have a question here: "Why do bees sometimes act like they are weak when swarming, by falling to the ground on vegetation, then going to cluster—I don't know whether I understand that question fully or not. If anybody can answer it, we will be glad to hear him.

MR. J. C. WHEELER.—Mr. President, I think I can answer that question in a way. It usually happens when there is no honey coming in and when the bees swarm out of the hive and are in a starving condition. They drop down before they get to their cluster. I have had that happen in a chilly wind.

MR. STEWART.—They do that any time if they are in the air, any time till they get tired they will drop.

THE SECRETARY.—Isn't it a fact that those are largely young bees not able to fly yet, that go out with a swarm? Most of the bees that leave the hive are heavily laden with honey when they swarm, that makes a tendency to drop. Either young or old bees could fall that way.

MR. FLOOD.—Then that is not a sign of weakness on the part of the bee. If there is no nectar coming in, it would indicate starvation. If they are starving they ought not rush out that way, but when the system is, you might say, in its best state, and they come out that way, it would indicate not a weakness, but an overloaded stomach. The case that I spoke of was in the midst of our good season. They came out, a very nice swarm, and they flew around, and pretty soon the ground and vegetation around was literally covered. They went to cluster quickly.

I never saw it so pronounced in that way. So I was just wondering if there was something that was preventing the bees from standing, if it was young bees, or what it was. There was no shortage of food. I know that, but when they came out and were only in the air a short time, sometimes it takes them longer to settle than it does other times, but in this case they had only been in the air a short time, and when the bees took a notion to alight I saw the vegetation was covered with bees, and I was a bit alarmed about it, I thought that they might have some disease I didn't know about, that made them weak, yet there was a fine swarm that came out.

THE PRESIDENT.—They all joined the cluster, then?

MR. FLOOD.—Yes, pretty soon. After the queen took her position they went there and made a fine cluster. But I was afraid, though, that they had some disease I hadn't got on to, and if there was some diseased condition about it I would like to hear from our brother members here. If it was because of an overloaded stomach, I am not worried.

THE PRESIDENT.—It is probably due to young bees and the heavy load they carry. I have observed something similar to that, yet different, in many respects, called "Disappearing Disease," where the whole ground would be covered, but not at the time of swarming.

MR. WOODWARD.—After the queen left it was only a short time until they took their position in the cluster.

MR. J. C. WHEELER.—Another thing, when the virgin queen comes out, naturally the swarm comes out and they go together. If one has a virgin queen, bees are apt to fight, and in that case a great many dead bees are found on the ground.

MR. WOODWARD.—These bees are not dead, they seem to be overloaded, as you might say, and were weak or tired.

THE PRESIDENT.—The next question is, why do you sometimes find nearly grown brood removed from the comb; thrown out in front of the hive?

MR. RETTIG.—It would indicate starvation, I would judge, if I would see it in an apiary of mine, that to be able to feed their brood they had, they would carry the larvae out to save the rest of the colony; or, if it be cold weather and they were chilled, they would carry them out in a case of that kind.

THE PRESIDENT.—I think Mr. Rettig is right about a starved or chilled brood. Sometimes the flow stops suddenly and the bees do not get sufficient food for a short time, then they begin to carry out the brood.

MR. WOOLDRIDGE.—May I ask when those conditions are shown, would it indicate that the flow had stopped, would that affect them to that extent when they have got a good supply of honey on the inside?

MR. RETTIG.—I don't think that would cause the removal of the brood. I think there must be some other cause for it besides starvation.

THE PRESIDENT.—What about the temperature?

MR. WOODWARD.—The temperature was midsummer. There was plenty of warm weather. That is the time this occurred.

THE PRESIDENT.—Could it have been too warm?

MR. WOODWARD.—No, I don't think so. They had fair shade and the entrance was plenty large. As to overhead conditions, I don't believe better ones existed.

MR. DADANT.—Had any drones already appeared in the hive?

MR. WOODWARD.—A few.

QUESTION.—Right in the midst of the swarming season?

MR. WOODWARD.—Right in the midst of the swarming season, yes. The bees around were swarming. We were wondering why they should deliberately take a few grubs almost ready to hatch, and pile them out in front.

QUESTION.—How many were out?

MR. WOODWARD.—Oh, quite a few.

A MEMBER.—They might have been poisoned.

MR. WOODWARD.—This apiary is located in a section of the country where they do operate, but it was really too late for spraying.

A MEMBER.—Some people spray every month.

MR. WOODWARD.—If they do in this section of the country, I do not know it. It was really after the bloom. There was a great amount of grubs thrown out of each hive, there were enough to be noticeable.

MR. RETTIG.—I would suggest in this case that if the bees were not poisoned, it may have been chilled brood. Probably the bees got robbed. If they were a weak colony, probably a stronger colony robbed the honey out and the brood would chill and die and be carried out from that. That is about the only think I know of that would cause that, either that or a shortage of honey.

MR. WOOLDRIDGE.—Then there is only one thing that I would say would cause that, that would be poison, because I went to the trouble to ascertain the condition of their food supply which was ample at that time. The weather was ideal for summer weather. It would simmer down to the fact that it was a poison, somebody sprayed something poison on their orchards after the fruit had been set. It might have come from that, if they spray more than two times it is more than I know about in that section of the country.

MR. RETTIG.—It is more than likely, if the colony was fairly strong, because they would hardly chill.

MR. WOOLDRIDGE.—This apiary is about three hundred miles south of here, and I will look that matter up more carefully next spring.

THE PRESIDENT.—You know that spraying sometimes is done after the bloom is gone and the spray material falls upon the clover, and then from the flow there under the trees you might get the poison also.

I have here another question: Shall we finance the price committee for inquiring concerning crop conditions in other states? Who will answer?

MR. J. FRANK HAAN.—Will the gentleman that asked that question get up and give us a little more explicit information on that subject?

MR. J. C. WHEELER.—I asked the question, but I am looking for information myself.

MR. HAAN.—Tell us what you want.

MR. WHEELER.—I am wondering if it isn't asking a great deal of the price committee to go to work and find out a definite condition of the crops all over the country before they could make their report. They can, of course, inquire of the beekeepers around where they live, but they can't set a price for the honey for Chicago, not knowing what is coming toward Chicago and on the road to Chicago. That happened this fall. The price committee set a price to Chicago, and now Chicago is flooded with a lot of western honey. If they had known about that it might have made a difference. There is the question as to whether or not they ought to have their expenses paid in these findings. I just brought up the question so it would come before you, if you thought the price committee ought to branch out and inquire about the crops in other localities before they make their report.

MR. C. O. SMITH.—Mr. Chairman, it seems to me that it is almost selfevident we can't do that. We don't have money enough in our treasury to find out the crop conditions in Indiana, if we were to ga at it independently. The government spends thousands upon thousands of dollars to get those reports that we get through the bee journals, and this committee takes the same information that we all get, and studies it carefully and arrives at a conclusion, is the way I understand these prices are made. But this association, if we would spend all the money we all have, we couldn't get reliable information on what the crops of the United States are going to be.. I have done a little bit of that work in my own neighborhood, and I don't know what my crop is going to be until after I get the report.

THE SECRETARY.—Mr. President, I might say that Mr. Smith has got it about right. He has the right idea as far as I am concerned. That is where I get my information, from the government crop reports. I get them for about two or three years back, study them carefully and find out where the honey is. This year the report came out in August. I think if you glanced over it you would say, "Look at all the honey they have!" Some of the New England states report big crops. The result is that the average is away up, and the actual fact is that the amount is going to be short. The report is so misleading that they

sent a letter explaining it before they sent it out. I notice in the last report that came out here a short time ago, November first, they gave there, for the entire United States, every day, what percentage each state produced of the honey this year. States producing less than one per cent were shown with a star, and so on up to fifteen per cent. I believe California was the highest. If a state reports five per cent of honey in the United States, you can see what the average has been for two or three years back, and you can form pretty reliable estimates of where the honey is. We are not mind readers, we have to go by conditions as they actually exist. The letters are not mailed out until after we get that crop report, and you guess at it as well as the next one, but we don't want to let these letters go out on guess-work.

MR. WHEELER.—Can you tell us what the comparative price is this year, as against last year, what the price is on both comb and strained honey?

THE SECRETARY.—I think comb honey this year is five cents a pound higher than it was last year, if I remember right.

MR. WHEELER.—And extracted is about the same.

THE SECRETARY.—About the same.

MR. WHEELER.—That is the point I was getting at. If you put it five cents a pound higher this year, when the last reports came out they reported crops all over the United States were equal to the crops of last year. That is the last I read in Gleanings or the American Bee Journal, so that if the crop is the same we are five cents higher than last year.

THE SECRETARY.—That is all right. Suppose we take the price of all commodities a year ago. Would five cents a pound be too much of an increase, provided the crop was the same? I don't think it would. Everything is on the upward tendency. We have to take all these things into consideration. We will ask a retail price of one dollar and seventy-five cents this year where we asked one dollar and fifty cents last year. That is five cents a pound more. Mr. Dadant told you last year the wholesale price was thirty cents in some instances. It was too high. This year it is down more, but still we have raised the retail price. I don't think there is too much margin between the two.

QUESTION.—How can I put a swarm with a virgin queen, with one that has a fertile queen, without killing the bees?

A MEMBER.—Without killing either one of the queen bees, I suppose, is meant.

THE PRESIDENT.—I don't know hardly how to do that.

MR. O. C. SMITH.—Shake them in. That won't kill them. Do I understand that you want to save both queens?

THE PRESIDENT.—I don't believe he says what he means.

MR. DADANT.—Probably he meant there that the bees will fight if you put a swarm with any kind of a queen in with a colony already established, you are going to have some fun. I suppose he wants to

know how to do that. If you put them together without some precautions, you will have some fighting. I suppose that is what was meant. The best thing to do is to change them—put them in a separate hive. If you don't want to do that, give them plenty of smoke to confuse them, put the hive on the stand and run them in, and there will be a few bees killed but not many.

THE PRESIDENT.—You can unite them by putting one hive above the other with a sheet of newspaper between. When the queens get together one of them will be killed. That works all right through the summer when the weather is good and weater conditions are right. It won't work quite so well when the weather gets cool, late in the fall. If the weather is hot you must be careful about putting in the newspaper without making a small opening, otherwise they might smother. If the weather is very cool in the late fall, they may not get through the paper at all.

MR. FRANK SOPHER.—I have done that a good many times. About four years ago I got eight swarms from the woods, and that is the way I did. I put one swarm on top of the other and put a newspaper on there and took my knife and poked holes through it, and you never could tell the difference; they went right down together, as nice as could be. I doubled up eight swarms that fall. I cut one out of one tree and one out of another and brought them home and put them together like that, and never had any trouble at all with them.

MR. STEWART.—Use a queen excluder, it will answer the same purpose.

THE PRESIDENT.—They might fight with a queen excluded, I have tried that. You want something that will keep them apart long enough till they will become acquainted gradually.

MR. GREENSON.—I had a peculiar thing happen to my bees. About two weeks ago I commenced feeding them with a mixture of two pounds of sugar with one pound of water. Shortly after that they seemed to become unsettled and began coming out of the hive in the snow, before the snow melted. Now since the snow has melted, they are still coming out. Yesterday I counted in front of the hive about three hundred, that came out yesterday during the forenoon. Of course, a lot of them flew further, and those that did I couldn't count, they were on the grass. I was just wondering what caused that, whether the feeding so late in the season did it, or whether I should have fed instead of the syrup, a candy.

QUESTION.—Did you use brown or white sugar?

MR. GREENSON.—White sugar, two pounds of sugar to the pound of water.

MR. RETTIG.—Did you feed the syrup warm or cold?

MR. GREENSON.—Hot.

MR. RETTIG.—That would cause the bees to fly out, that would cause the bees to chill, and they probably wouldn't get back.

MR. GREENSON.—I fed them only two days, in five-pound Karo cans, with perforated holes, and they cleaned out about fifteen pounds in that length of time, and there was no stir among the bees that I noticed, until about a week later.

MR. RETTIG.—There is some other cause for that besides the feeding.

MR. SMITH.—All the bees that were dead, did you see them come out of the hive?

MR. GREENSON.—They were active and all right till I began feeding them.

MR. RETTIG.—How large were the openings in the lid when you turned the can up.

MR. GREENSON.—There were little perforations, about fifteen, I should say, in the top of the Karo can, which I inverted over the cluster.

MR. RETTIG.—Did you notice whether any syrup had run down over the frames at the bottom?

MR. GREENSON.—I left it turned over till it stopped running in a pan, then carefully looked it over.

MR. RETTIG.—Oftentimes in feeding syrup with an inverted can, it will run down through over the frames and chill the bees, and get on the bottom board, and if it is freezing weather I have seen the bees even freeze. Of course, that would have a tendency to weaken the bees, and possibly in flying out they would be so weak they would not be able to get back, but I have found that the best results in feeding are obtained by taking a bucket of any size and putting excelsior or straw or anything like that, then pour your hot syrup on top; the bees will crawl down on that and will take it all up, then there will be no chance of drowning the bees through those perforations. But in cool weather you can't do that. The bees can't take it up fast enough, and if there is anything like straw or hay or excelsior in there, in a week's time or so it will sour the cells, but in warm weather they take it up very fast, but after it gets cool you would feed nothing but the hard candy to get the best results. A nice way that I find to feed candy is to take a super with a newspaper at the bottom and turn the edges up.

QUESTION.—How much do you feed?

MR. RETTIG.—Two and a half pounds for about twenty-five swarms, according to the amount you have, then if it is cold, but not too cold so you would lise the heat in the hive, have that candy warm. One piece of candy will fit any of your supers of a standard make hive, then when you put that in, invert it on top of your frames, while hot, and if there is a little bit of heat lost, the head of the candy that you throw down on top will swell the edges almost tight and hold the heat down. If there should be a little bit of heat lost from the cluster, they can get up against the candy, it being warm, and they will soon commence to work on it

and will soon eat across from one frame to the other, according to the size of the cluster. Some prefer laying a stick on top. When you do that, it will be just like raising the roof of your house, the heat in your house will pass out and over from one to the other, and let the heat go to where there is no fire or anything, and you may desire that. The same way by putting sticks across your frame. If it is laid down flat on the frame, it can't bridge across from one place to another, only as the cluster gets through, and as they shift positions from one side of the hive to the other they will bridge across. I have found it to be the most successful way of feeding in cold weather, in preference to feeding the syrup. It is more work, but I would prefer, if feeding syrup, to do that along about in September. For this purpose I tried to select a day when I could get in the yard in my shirtsleeves. After Thanksgiving I do not like to open a hive if I can avoid it. Usually along about the first of March I open up the hives, unpack them, and see that they have plenty of feed, and even if they have, and have no candy on hand, I aim to give them about a pound or two, and I think it starts the queen laying, and a light flow coming in it gets the bees built up early for spring.

QUESTION.—How do you make it?

MR. RETTIG.—I take one gallon of water to four gallons of sugar, and I take it off the stove as soon as it commences to boil. I take one hundred pounds of sugar at a time, and I keep stirring it. If you don't stir it, it is just sticky like taffy. If you stir it, it becomes brittle like fudge, and the bees can take it up easier. I boil it till it bubbles up like a mush, and it will stick around the edge of the container. I scrape it down and when it is a little hard I dip it in water, and when it gets hard enough that I can feel it isn't soft, I consider that it is done and I pour it into my supers, feeding just about what I think the colony needs, and in that way I have found I got the best results.

QUESTION.—You don't stir it after you take it off the fire?

MR. RETTIG.—Stir it as soon as you put the water in and till it gets to boiling. I just stir up my sugar and keep on stirring it until it is just about done. If I didn't I get a taffy in the place of candy, because it will be hard and brittle, and it will be harder to take hold of. If I stir it, it is more like a fudge. It feeds easily, the bees bridge across on the bottom of it, they bridge across from one frame to the other.

QUESTION.—Do you use brown or white sugar?

MR. RETTIG.—Granulated.

QUESTION.—Did you ever try brown sugar?

MR. RETTIG.—I have had no success with brown sugar. The light sugar seems to be the best for bees.

QUESTION.—Beet sugar will work all right, will it not?

MR. RETTIG.—Oh, yes, it is all right.

MR. HAAN.—On that candy proposition, I have tried a little experiment, and we haven't always been successful. In making that hard candy it seems that the least little scorch in it spoils it. You have got to be very careful, you might as well throw it away as to feed it. In regard to stirring this stuff when cooking, I understand it makes a creamy fondant if you stir it.

MR. RETTIG.—It is more brittle and soft. It really makes a hard candy if you don't stir it, and if you stir it it is softer.

MR. WHEELER.—Isn't it a foamy substance when you stir it all the time? If you don't stir it, it will turn hard like glass, but it gives excellent feed for bees in the winter, but stirring it constantly while cooking, they say, turns this sugar into a white, creamy substance. a sort of granulous mass.

MR. HAAN.—Does that injure the bee?

MR. WHEELER.—No, but I should consider the hard feed better than the fondant.

MR. RETTIG.—The hard feed is more like a rock. It will hold both cold and heat better. By stirring it, it becomes more porous, like sea-foam, and it does not get as cold in the hive as the hard candy. I find that the bees will do better when I stir it than they do when I do not. because it is softer and it does not get as cold as it would if it is real hard like a rock.

MR. HAAN.—That is what I am trying to get at.

MR. RETTIG.—When I want to break it, I generally drive down with a truck and, say I want to feed one colony, I take a super two and a half inches deep, I take a knife to the edge of the truck and break the thing in two and give them half of it, and fill the balance of the space up with rags. But if it is cool weather I try to put it in hot and keep as much heat in there as possible. If anything, I try to give them a little more heat rather than try to take out any. It will give better results.

MR. HAAN.—I might say that in making maple sugar, if you boil the sap down to a certain consistency it is syrup, molasses. If you keep on it becomes sugar and you can dipper it out in pans, and it will become hard, but if you want to make grain sugar you will have to keep on stirring it, till, when it begins to get colder, it all crumbles up to the consistency of which you speak. Many years ago I made many kettles of it, so I know what I am talking about.

MR. STEWART.—Another thing these men have forgotten; they have forgotten that beekeepers do not buy sugar.

A MEMBER.—Good for you.

MR. RETTIG.—Probably not every beekeeper is successful.

MR. BROWN.—There is one other point that I believe has not been brought out, and that is this: boiling sugar does not seem to injure the bees, but boiling honey is fatal. Why is it you can boil honey for feed

for bees and bees will die, but you can boil sugar and evidently there is no harm in it?

MR. STEWART.—When you are boiling sugar, it will scorch much easier than honey will when it is boiled.

MR. BROWN.—If you feed back honey you do not know whether you are going to feed foul brood or not. In feeding sugar you avoid foul brood, but if you put honey in your sugar to make hard candy, when you are boiling it the honey will scorch when the sugar will not. That is the reason why, when you boil your honey, it kills the bees. It would be all right for summer feeding, but for winter feeding the honey is too liable to scorch. It will not stand the degrees of heat that sugar will.

THE PRESIDENT.—You can boil either one if you put water with it.

MR. GILL.—I am afraid we are getting away from the question. The man who asked that question would like to know why his bees come out these cold mornings, a week or two after they had been fed, so it seems to me that had nothing to do with it.

MR. RETTIG.—Did they have plenty of honey in the comb?

MR. GREENWOOD.—I thought they had when I looked at them in front, they had several outside combs two-thirds full of honey.

MR. RETTIG.—If they had plenty of honey they should not have come out, but if the syrup settled down and froze they wouldn't have had anything to eat. That is the only way I could account for it.

MR. DADANT.—We all know that when bees are confined for a long time they become restless. That is because their intestines become overloaded. Isn't it possible that feeding these bees this sugar syrup, which was probably a little warm, caused them to fill their stomachs with it and then their intestines became overloaded? They had no opportunity to fly and they simply got restless. It seems to me that in a week or two weeks, especially if weather conditions were right, if the syrup was where they could get it, they might have eaten more of it than they should have and for that reason they felt like they had to get out and take a fly, and that is the reason.

MR. HAAN.—It was two weeks after.

MR. DADANT.—Possibly two weeks would be long enough for them to get uncomfortable, but they certainly would come out.

THE PRESIDENT.—Mr. Smith, what have you to say on that?

MR. SMITH.—I can't give my experience, but I will say that I think there is a very great difference in the disposition of bees, just as much as there is between people or animals or anything else. Yesterday I saw bees coming out of a certain hive. I couldn't account for it. I don't believe anybody could account for it. The hive had at least thirty-five pounds of honey in it, and yet every now and then a few bees would fly out. Once in awhile one would get back, but very few of them did. I think we make a mistake, sometimes, in figuring that bees are all exactly alike and always do the same thing under the same cir-

cumstances. They do not. There is a vast difference in their disposition and what they will do under similar circumstances. I have different colonies that I have tried to unite, but they haven't united yet. There is no paper between the two hives, but they are there. I have them in three separate clusters, and I except to find possibly, maybe two or three queens in some of those united colonies next spring.

MR. WHEELER.—I think it is a good time to bring up the question of the value of brown sugar as against white sugar, and who has tried the brown sugar and found out that it is detrimental to the bees. If we can settle that here, I think it would be a good idea. I know of a man in Wisconsin who had to feed brown sugar because he couldn't get the white. If there has anyone tried it and found it gave the bees dysenterry, let us hear from them.

THE PRESIDENT.—Has anyone tried the brown sugar with or without the white, and what results did you get? In regard to Mr. Dadant's suggestion that the bees may have taken too much white sugar, I would suggest it is stated, theoretically, that there is no waste matter in white sugar, it is all food. If bees are fed on sugar there is no waste matter to be taken into consideration. It is all pure sugar.

MR. DADANT.—At the same time, Mr. President, the bee doesn't ordinarily fill himself with syrup or honey when he goes into winter quarters. Whether that would have anything to do with it or not, I do not know. They eat it just as they need it. They would have their stomach full of honey or sugar when they go into winter quarters.

THE PRESIDENT.—It is a bad thing to feed liquid food to bees late in the season, when the weather is cool. It is much better, if you are feeding liquid food, to feed earlier in the season, along in the summer. The best way of all, I find, to feed bees, is to have plenty of combs filled with good, capped honey, and when they begin to run short slip out the empty comb and put in a full comb.

MR. DADANT.—It occurs to me there is another reason we have overlooked in the feeding of the sugar. You have had considerable cold weather and you fed during the cold weather, and if it had been a little more cold they would have taken some of the syrup they hadn't taken before, and you all know what it is to feed syrup or honey to bees in the daytime. It excites them more or less and they go out. It might be that they took some of that syrup, that he speaks of, and it excited a few of them so they flew out. That may be a long guess, but it may be why they came out.

MR. BROWN.—I would like to suggest that the bees had just got through eating, and they came out to see whether they could get some more. (Laughter.)

THE PRESIDENT.—We have some more questions if this has been disposed of satisfactorily; how would you clean an extractor and tools after extracting the foul brood honey?

A MEMBER.—Burn them with a blow torch or scorch them a little bit.

THE SECRETARY.—Clean the extractor with boiling water.

MR. RETTIG.—Hot water would clean the hive.

THE PRESIDENT.—If it was American foul brood I would suggest you use plenty of boiling water and let it in long enough so it will kill the germs, and then wash it thoroughly.

MR. BROWN.—Dr. Phillips said last summer that he had never yet has a case brought to their attention where an extractor was known to transmit foul brood, but he recommends cleaning an extractor as a precaution, but they haven't had any trouble traceable to that cause.

THE PRESIDENT.—Here is another question. Can a queen bee be induced to lay more than her quota of eggs in one season, if so, how?

MR. HAAN.—Mr. President, I wrote that question, and the reason I asked it was this: I read so much about having strong colonies in the fall, trying to induce the queen to lay more eggs or produce more young bees to winter over. I tried my experiment with a number of nucleus, and I have had the nucleus late in summer, but it was still quite warm weather, but I couldn't get the queen bees to lay any more eggs or produce more young bees to winter over than just so many. It seemed after the season was past, they didn't seem to lay, whether they got feed or no feed. For that reason I asked that question here today, to see if anybody else could give me any more light on the subject. I, of course, have tried the experiment. Now I am satisfied myself that it can't be done advantageously, and that a queen will not lay any more than a certain number of eggs, any more than a hen will lay during a season whether she is fed any more or not. If anybody else here has tried it, I would like to hear from him.

MR. COLEMAN.—I think the strong bees will.

THE PRESIDENT.—You mean that in a strong colony a queen will lay more than in a weak colony?

MR. COLEMAN.—Yes.

THE PRESIDENT.—Yes, that is true. The egg-laying may be reduced by lack of feed or room or a lack of bees to take care of the brood; any one of those causes will reduce the amount of the eggs, but if they have plenty of room, plenty of feed and plenty of bees, can you increase it?

MR. C. O. SMITH.—Mr. President, right there I think we open up a question that is very interesting, because I believe that we can increase the egg-laying, but I think it is a long, arduous task. We have got to learn more about the bees, and we have got to handle them better than we do now. There are articles in the bee journals which we have all read, one man in particular that we all know writes every two or three months regularly, and has for the last seven or eight years. About three or four years ago he stated that the bee was perfect and had been

for five thousand years or about that time, and that it was useless to try to improve it. Nevertheless, I have worked for fifteen years with bees, with the sole idea that they are exactly like other animals and the human race, that certain conditions will change them the same as it changes all other animal life, and I haven't made very much progress, but I have made a little. I have read practically everything that I could find in bee literature, and tried to sift out the best. I have a queen bee this year that is probably four or five generations removed from one that I observed, several years ago, that lived to be seven years old. One of her offspring lived through winter-before-last, one of the coldest winters we have ever had, and the winter before that, without any protection. After the coldest winter she came through with the strongest colony of bees that I have seen anywhere near Chicago; she was one of three that were left, out of one hundred and twelve colonies that had wintered through the two winters without protection. One of her grand-daughters this last spring in May, had perhaps three-quarters or a pound of bees. She is a virgin. I examined the hive and considered it lost because there wasn't over a pound and a half of honey, or maybe two pounds of honey altogether, in the hive. They were eight miles from where I live, two colonies were there, one in a very good condition, with a sister queen in it. This queen I gave up as lost. I would have had to have taken that trip of eight miles to have fed her, and I didn't want to do that, so I left them there. In the latter part of June I went back there, and she was the equal of any hive that I had among forty or fifty others, and produced over one hundred pounds of surplus. That queen laid eggs in spite of the small number of bees in the hive and in spite of the fact that the fore part of May she didn't have two pounds of surplus honey. I thought there was two or three chances of their disappearing, one was because she could not make good, another was that they would starve to death, but that was the second best colony of bees I had this year. With about—somewhere around fifty hives, the only bees that produced any surplus for me this year (except two) were daughters or granddaughters of that queen that wintered two winters without any protection. Whether that can be kept up or not and still improved, I do not know, but I am satisfied that the success of the hive is very largely with the queen, and that in order to increase our crops, while we do not want to neglect taking good care of them and the hives and all of the paraphenalia that we ought to have, I think we should look more to the selection of our queens. (Applause.)

THE PRESIDENT.—I do not want it understood that I stated that the amount of brood a queen could produce could not be increased by proper selection and breed. I had reference to an indifferent queen. I think Mr. Smith is exactly right. I have had similar experiences with my own good stock. Has anyone else anything to say on this?

MR. DADANT.—Do I understand the question to mean that a queen lays so many eggs during the season, regardless of what the beekeeper does?

THE PRESIDENT.—No, I believe I stated that the number of eggs may be reduced by a lack of food or a lack of room or lack of bees to keep the brood warm, but given plenty of bees and plenty of food and plenty of room, the individual queen cannot be induced to lay very many more eggs.

MR. DADANT.—She can't be forced beyond her limit.

THE PRESIDENT.—That is the idea.

MR. WOOLDRIDGE.—I made an experiment this season. I took two fairly good hives, and I fed one by the slow process and the other by the rapid. The one that I fed so they could carry it down quickly provided more room for them all along. They never were honey-bound or never lacked room as to the amount of eggs they could lay. The one I fed for stimulating and slowly built up rapidly, cast a good-sized swarm, and both the original hive colony and the swarm produced, each, equally as much as one that cast no swarm at all. Now, as far as I know, the queens were equal the year before, and they seemed to have about the same amount of bees, but what made that difference? Was it the slow feeding or the quality of the queen? I caught a swarm, and the swarm produced as much honey as the one I fed rapidly, and after an experiment by the slow feeding I produced an extra swarm and that swarm produced as much as the original and as much as the other hive that didn't swarm. What caused that? Was it because of the quality of the queen? I am inclined to believe that the stimulative feeding helped that queen along. She kept busy laying right along, because she either was fooled or thought there was a flow coming it. I did it as an experiment, that was all, but those were the results I got with those two colonies. I selected good colonies and as near alike as possible, but I do believe you can increase a queen's laying capacity in the spring by stimulating the feeding a little bit, by a slow process as in this case. I do not mean to make her lay an unusual amount of eggs, but I do think the queen is partially governed by the flow that comes in, the increase in the young bees will be along anyway. I am simply telling you what I did with one stand or colony of bees by feeding it, and I intend to give it a fair test. I had no idea a thing like that would come up here for discussion. I wanted to find out if I could get better results.

THE PRESIDENT.—That is an individual case. There are so many factors entering into it that it is pretty difficult to say why. I once tried it out with about fifty colonies that I fed in the spring, stimulative feeding. A number of years ago some of our leading beekeepers advocated stimulative bee feeding in the spring for getting the summer flow. I tried it with probably fifty colonies that I fed and fifty that I didn't feed. I could see no advantage on the average, although some colonies

would produce more and some less. I believe it is the concensus of opinion among beekeepers that have tried this out, that stimulative bee feeding does not pay. It might have been all right in this individual case, but the increase might have been due to some other cause.

MR. SOPHER.—I had a little matter come up last spring. I had a swarm of bees at home. The queen had a bunch of brood. I let her go for two weeks; it came a warm day and I opened them up again and I couldn't find the queen anywhere. I looked around, and I found three queen cells. They had all been hatched, but I could only find one queen. The other queens had died. There wasn't a drone in the hive, not one. What should I do? I went out in the country and I got six drones out of another hive (laughter). I brought them home and put them in the hive. I got home about ten o'clock at night. I put them in the hive, lifted up the lid, turned the bottom side up and let them go down through a little hole. I went along for about two weeks. I looked in the hive, the queen was laying eggs (laughter). Everything went along all right and I had the nicest swarm of bees that anybody wanted to look at.

MR. HAAN.—To sum it all up I suppose if we rush the queen in the spring there won't be so many young bees come out in the fall, because she is limited, but if we let the queen take her own way and go at it easy in the spring, she will probably come out with a strong colony in the fall, to go into winter quarters, but if we rush her in the spring, I suppose that would produce only a certain limited number of young bees in the fall.

MR. DADANT.—That limited egg-laying capacity of the queen, as you submit, is governed by the amount of food she gets, and her age, etc. In a good season the queen will very likely lay three or four times as many eggs as she would have if you had hurried her all the way through. She only lays so many eggs, but it will be so many one year and so many another, so you might say there is no dividing line as to what a queen will lay. It is a question of conditions as to what she will lay.

MR. WHEELER.—One point you have ignored, you haven't found out how many eggs the bees eat up.

THE PRESIDENT.—They will eat the eggs if they are short of stores.

MR. SOPHER.—Did I do right, that is what I want to know?

THE PRESIDENT.—Can we improve the bee by proper selection? We certainly can. If they are acquired characters, will they be transmitted?

MR. SMITH.—Acquired characteristics, no.

MR. DADANT.—In a long enough time.

THE PRESIDENT.—What qualities are transmissible?

MR. SMITH.—Mr. Chairman, I asked that question because I wanted to get more light.

MR. KANNENBERG.—Mr. Taylor can answer that.

MR. SMITH.—I wish this association or some other association would take up that work. For instance, I do not breed queens to sell and shall not, if I ever do, before I find out that I have the goods, as we say. I can't breed queens for one dollar apiece or two dollars apiece or three dollars apiece, but if I can produce a queen that is better worth ten dollars to a man than the average queen for a dollar, then I think I would like to breed queens. I can remember the time when the best Hereford cattle in the United States, the best animals on the market, could be bought for five hundred dollars, and the other day a Chicago man went down to Georgia and paid seventy-five thousand dollars for five head, and they were worth the money. One of my neighbors paid ten thousand dollars for one hog. I can remember when the best hog in the United States could be bought for one hundred and fifty or two hundred dollars. We have never done that or tried to do it scientifically with the bee. The queen that will produce this year, in a poor year, one hundred and fifty pounds of honey, is better worth ten dollars than any queen that I have bought on an average worth fifty cents, because on an average the queens I have bought wouldn't produce any surplus. Some of them would, but I have one queen this year—I ordered twenty-five queens, and out of the twenty-five I got one, I think, that I would allow to remain in the hive next year. I ordered untested queens, and about two-thirds of them had been clipped. I don't know why they were clipped, but one queen, her bees placed practically all the honey they gathered, in the super. I had two hive bodies, ten-frame, and at no time during the season was there over three or four pounds of honey, or at least not to exceed four pounds of honey in the brood nest, and for a long time there was no queen excluder on it. Now, that queen's bees put the honey in the upper story, and when fall came they didn't have five pounds of honey in the brood next, and over fifty per cent of it was in the super. For about three or four days during the season at one time when all the ten frames were full of brood below, the queen went up and laid in two frames above. I have never before had a queen that would do that. I would like to know if that is a transmissible quality, so as to know whether to use that queen to breed from. If that quality is transmissible, if her daughters will do the same thing, that can be increased by selection just as all other characteristics are increased by selection, and there have been brands of cattle selected for beef so long that the cow doesn't give milk enough to raise the calf, so I believe that you can make, by selection, a breed almost anywhere we want it, but we are wasting time unless we know the qualities we are trying to get are transmissible. I know of two other queens that showed remarkable tendencies. One queen was in a yard where there was American foul brood, in every colony but one. There was American foul brood in five different bee yards within a mile of that place. This hive of bees went

through the whole summer and didn't contract that foul brood. There was two or three weeks when there was no honey coming in, when they had access to the hives of honey where the bees ad died out from American foul brood. Now, thousands of those bees were taking honey out of the hives where the bees had died out because of American foul brood, and yet it didn't generate the disease in that colony. Whether they were immune or not, or whether there was some accident or something of that kind, of course I didn't know.

MR. DADANT.—Was it a strong colony?

MR. SMITH.—It was a very strong colony.

MR. STEWART.—Are you sure they didn't rob out any of the others?

MR. SMITH.—They weren't robbing when I visited the locality. I visited this particular apiary for the purpose of finding if there was foul brood there. The lady said, "We lost a good many of our bees last winter. They winter-killed. Now the strongest hive we have got sits over there." I think it was with two hive bodies. She told me I could examine all of them if I wanted to. I went out and looked at the strongest colony and saw it was no colony, it was the robbers. There were more bees working there than any place else, they were all robbing it out. I found four hives there, four different stands, with two hives on a stand, with thirty to fifty pounds of honey in each one, and on nearly every frame you could see the remains of dead bees that had died from foul brood, so that I thought it was utterly a loss for that strong colony in that same apiary to be robbing out that honey.

I called on an expert handling bees and we went out there three times that summer and watched that colony, and foul brood didn't develop there that summer.

QUESTION.—Did that colony produce honey?

MR. SMITH.—Yes, when I was out there, it was a ten-frame hive and I think there was three supers, besides the hive body that the brood frames were on, and there was over a hundred pounds of surplus last year.

MR. WHEELER.—They probably got that out previous to the robbery.

MR. SMITH.—But Mr. Duff shook the whole apiary and cleaned up the foul brood, and he also went to four or five others and cleaned them up in that locality.

QUESTION.—In that locality what did the bees gather?

MR. SMITH.—Some would gather one hundred, and some would get nothing.

MR. STEWART.—The one that wasn't robbed gathered one hundred pounds. Have you ever noticed some bees won't rob anything and others will?

MR. DADANT.—They might have been finding the source of a nectar the others hadn't.

MR. SMITH.—They were either immune,, or for some reason didn't take it, but there was foul brood all through the locality, within two or three miles. If that is a quality that may be developed by bee culture, if there is a class of bees that are immune from foul brood, or a tendency to be immune, and we can breed that class of bees till they become immune.

MR. WHEELER.—Was the man that cleaned those colonies up working for the State?

MR. SMITH.—No, he just wanted to help his neighbors. If we can know the qualities that are transmissible, then we will know what to work on.

MR. HAAN.—Mr. Chairman, I would like to have a few words on that strong colony subject. I think that a colony during the height of the honey flow will not rob any hive as long as they can get the free nectar. Later on in the season when there is no nectar to be gotten, I believe bees will rob almost any other colony they can get at. This robbed honey comes in so late it is probably after brooding time. Then this honey will probably be used up first also, before they would start brood rearing. In the spring, consequently that colony would be considered immune from foul brood for the next season. There would be no foul brood in that colony for the next season, because they would use up that foul brood honey. I think if a colony is well taken care of, and if they have plenty of stores I don't think they are so apt to go to robbing as they might be if everything was taken away.

THE PRESIDENT.—In answer to one question Mr. Dadant brought up in regard to transmitting qualities, I believ the modern scientists have decided that acquired characters are not transmitted. By proper selection we improve or retard the development of the different species. The same law holds true with regard to the vegetable life as with animal life.

We have one question left, but are keeping that open till this evening. We meet at seven-thirty to hear Mr. Dadant on the subject of "Large Hives," and we will have some other talks. If you have any more questions you would like to ask and have discussed, please write them out and send them in.

Adjournment was taken till 7:30.

TUESDAY EVENING SESSION.

THE PRESIDENT.—We have on our program this evening the subject, "Large Hives," by Mr. Dadant. We will hear from Mr. Dadant.

MR. DADANT.—Mr. President, ladies and gentlemen: In taking up this subject this evening I will say that it was assigned to my father,

C. P. Dadant, who has been unable to attend the meeting because he was caught by a delayed train in Nashville, Tennessee.

All the Dadants of course have had considerable experience with large hives. They have been using them a great deal, but father and grandfather made a good many experiments years ago, which we know about, but which we haven't had experience with ourselves, though we did here five or six years ago put in a lot of ten-frame, Langstroth hives in our own apiary on one side, and left fifty large Dadant hives on the other; and our experience with them was practically the same as the experience by father and grandfather, years before. We were like a great many others, we perhaps thought father and grandfather were mistaken, we had to see for ourselves, and we have since discarded them. We have some of them in our apiaries, but are gradually working them out. You must remember we run for extracted honey production altogether, and while large hives are good for comb honey production, we are not in a position to speak with knowledge in regard to comb honey, but we do know what large hives will do with extracted honey.

THE PRESIDENT.—You have heard Mr. Dadant's paper. The question is now open for discussion. We will be glad to hear from anyone who has made experiments along the line of large hives versus small hives.

THE SECRETARY.—I would like to ask Mr. Dadant a question. How do the ten-frame Jumbo hives compare in size with your hive?

MR. DADANT.—With our Dadant hive?

THE SECRETARY.—Yes.

MR. DADANT.—The ten-frame Jumbo is one and one-eighth inches shorter than the regular Dadant-Quinby hive, the hive such as we are using now. It would make a difference of a little more than one frame.

THE SECRETARY.—What is the depth of the Quinby frame?

MR. DADANT.—Eleven and a quarter inches.

THE SECRETARY.—That is outside?

MR. DADANT.—Outside, yes.

THE SECRETARY.—The Jumbo is about what?

MR. DADANT.—Eleven and a quarter.

THE SECRETARY.—That would be the same depth.

MR. DADANT.—The Jumbo hive was first built by A. Draper, Alton, Illinois, and he persuaded the A. I. Root Company to build some hives like it for him. It was built with the depth of a Quinby and the lengths of the Langstroth.

THE SECRETARY.—How many frames do you use in the Quinby?

MR. DADANT.—Ten frames.

THE SECRETARY.—Same width?

MR. DADANT.—No, there is a difference of one and one-eighth inch in the width, because the Jumbo frames are one and three-eighths inch

spacing while the Quinby such as we use have one and a half inch spacing.

QUESTION.—How large is it?

MR. DADANT.—It is equal to about thirteen and a half frames.

QUESTION.—About a third larger?

MR. DADANT.—Yes, a little over one-third larger.

THE SECRETARY.—I would like to ask another question. If you were using the regular Langstroth hive and were changing to the large hive, would it be an advantage to use the Jumbo or Quinby?

MR. DADANT.—The Quinby as it is made now, we are using the Quinby. The Jumbo is the same length as the Langstroth. The objection to the Jumbo is it has only one and three-eighths inch spacing and if you use one and a half you can only get nine frames in it. The Jumbo with the nine frames would still be an advantage over the Langstroth with the ten-frames.

QUESTION.—Not these ten frames with one and one-half inch space?

MR. DADANT.—Yes.

THE SECRETARY.—You could still use your regular supers on the Jumbo?

MR. DADANT.—Yes. The modified Dadant is made with eleven frames, so it has the same capacity as our original Dadant hive. The reason that has been made smaller is because the old Quinby such as we used to know is both too wide and too long to permit the use of the regular Langstroth equipment, so this new hive has been devised in order that the beekeeper might use Langstroth equipment and have as large a brood chamber of the same capacity as the hive we are now using. There would be no difficulty whatever in using the Langstroth equipment.

QUESTION.—I would like to ask about the condition that hive is left in till the first of May. It is packed, and how long is it packed, and in what condition for packing is the new hive as compared with the old hive?

MR. DADANT.—In the old hive we have always practiced packing with forest leaves. Our old hive is made with a deep cap, about ten inches, and that is filled with forest leaves, directly over a straw mat which goes over the brood chamber. That gives an absorbent and an air space above, which we consider of prime importance. Then we use ordinary chicken netting to hold the leaves around the hive on three sides, and the front is faced to the south, and we have excellent results in wintering. The new hive has only a shallow cover. The new hive has been designed to meet the pocket of the beekeeper as well as his Langstroth equipment, and of course you can use any kind of packing that you wish with that, that you use on the large hive, excepting that you haven't the deep cap. We would have to add something like one dollar to the cost, and we didn't feel as if we should do that, because

the cost of our old hive is one of the things that kept it from coming into general use, that and the length of the frames, which were one and one-eighth inch longer than the Langstroth frames.

MR. STEWART.—Then your hive is only packed on three sides?

MR. DADANT.—Three sides. We usually face our hives to the south. We figure that if we pack the hive in front, that there are many days when the weather gets just warm enough for the bees to get a flight, that they wouldn't get out if they had that packing in front, for it would keep outside heat out, and many times bees will get out one day in the winter and it will save them when if we had the packing in front they wouldn't get out.

As far as wintering results have been concerned, we have had excellent results with our method of packing. Of course you must remember we are quite a little bit south of here, and our method is for our locality. It might be better to have more packing for the north.

QUESTION.—Don't you pack your bees in the fall?

MR. DADANT.—We begin packing about—as soon as the leaves fall, and lie finish it up before Thanksgiving, with our colonies, and they are packed pretty tight. If you have ever tried to weigh leaves down very much, you know they do not go down very far. In fact, after the rain and snow we had about a week ago, I went to look at them after that thawed out, and it is about as dry as it was before. We have very little trouble getting wet. We take precaution to draw them up very tight with chicken netting, and cram plenty of leaves down behind. We leave it on as long as we can in the spring. Some years, if we know we have got plenty of stores and there is some honey coming in, we leave it on till we think we have to look at them, in April or May, but sometimes we have to take it off a little earlier, because they are short of stores. We leave it on till the weather gets warm, if we can.

MR. DADANT.—For the new hive, by simply doing what we have done for years, that is nail a cleat on each side of the Langstroth body, very solidly, so that your hive won't pry it loose. We have done that for a number of years. Whenever we bought out an apiary with Langstroth equipment we would use it for that or until we got some more extracted supers, then after awhile we would melt it up, we would make use of it by nailing some cleats on the side.

QUESTION.—Don't you think a ten-frame Dadant hive, and a deep frame, two inches deeper, would be plenty?

MR. DADANT.—You mean the new size frame?

QUESTION.—Yes.

MR. DADANT.—We made it eleven frames so that if the beekeeper wanted to use a division board he could. Ten frames would be enough, eleven is a little better. We use a division board in all our hives, not an ordinary division board such as you get with the ten-frame hive on the market today, but we make a good, solid, substantial division board

with a cloth on each end, so that if you want to reduce the size of your brood chamber, to six frames, you can do it, and if you want to winter on eight frames you can.

QUESTION.—Do you reduce your colonies in winter?

MR. DADANT.—No, since there has been so much foul brood we don't dare do it. We would have to mix combs and we won't do it. My uncle, Mr. Baxter, at Nauvoo, always takes out two combs on a side and fills that space. He moves his division board over, which is closed on the end, and fills that space with leaves, which makes excellent winter packing. Then he has those two sealed full, to give to whatever colony he wants to, but he never had any disease in his colony. Some morning he will wake up with a disease among his bees and it will spread all over his yard.

QUESTION.—That packing then is nothing more than a windbreak?

MR. DADANT.—You might call it that.

QUESTION.—That is about all it is.

MR. DADANT.—I don't know that you could say that. It protects those three sides of the hives as much as any other packing would, except you have one side open.

A MEMBER.—They claim it isn't very good.

MR. DADANT.—That is true, too. We don't think it is either. That might be improved on, that packing, and we have in mind trying those packing cases, but when we come to figure up the lumber our heart fails us, because it takes an awful lot, in fact the way the government advises now, if I have it right, I figure that with good lumber and good workmanship it will cost twenty-one dollars for a four-frame packing case, retail price, so in view of that fact leaves are pretty good—leaves are good enough.

A MEMBER.—I would like to make a correction. I think Mr. Dadant made a mistake in eleven and one-half and the eleven and one-fourth.

MR. DADANT.—The old Quinby frame is eleven and one-half.

A MEMBER.—I was going to say I heard Mr. Hazen make a statement that he has on an average sixteen frames full of brood in fruit bloom.

THE PRESIDENT.—It depends on the stock of bees you have, whether you have proved bees or not.

THE MEMBER.—Sixteen frames would be an exception.

MR. DADANT.—That is more than an average queen can lay.

THE MEMBER.—That twenty-frame has packing on top till fruit bloom. The point I wanted to bring out was the new hive without that cap. This new large hive Mr. Dadant has brought out they haven't tried out as thoroughly as the old one with the cap on. That is going to make a big difference. That has been proved by using packing. This idea in this climate, of unpacking as soon as you can get out and

tearing the packing off is all wrong. Make your hive big enough so that you are going to have room enough for a twenty-frame arrangement and give her the protection and let her keep it. Give them a big hive if you are at it.

I have tried packing one twelve-frame Langstroth in government cases. I have got some of the government cases. They are an improvement, but twenty-one dollars isn't what you will have to pay. You can buy second-hand cases for one dollar and twenty-five cents. Put another dollar and a quarter on that and you have got your big case for a twenty-frame hive, and use your ten-frame equipment, and you will have to spend about four dollars to each colony to make a twenty-frame hive that is packed permanently the year around. Then you have got something that is worth having.

THE PRESIDENT.—I think that we should use the very best packing case, and I think the best is a good cement cellar. That is what I use. You can carry in one hundred colonies in a day in the fall, and you can carry out the same number in the same length of time in the spring. There are practically no losses. As far south as Mr. Dadant is, perhaps it isn't advisable to have that kind of cellar. In regard to the large size hive, I have been studying the question a little, and it seems to me there are one or two objections that come up, that makes it almost impossible for some of us to use them. Those of us who carry our bees around to different yards on a truck or otherwise find that by using the very large hives we will have some lifting to do. In the second place those large frames are hard to extract without breaking. If you put them in an extractor unless you are extremely careful in warm weather, your frames are going to break.

MR. DADANT.—We do not extract from the brood chamber.

THE PRESIDENT.—Another difficulty that I foresee in the method I use of handling bees is the fact that they are not interchangeable with the combs of the super, and I could not use them in my system of manipulation. Perhaps if you had another system of management you could do that very nicely. I mention these as the chief objections that I see to the use of the large hive. I realize there is a great deal of advantage in using them as Mr. Dadant has stated. We would like a further discussion of this subject.

MR. BROWN.—Mr. Chairman, I can say this: the twenty-frame brood nest packed weighs about two hundred and fifty pounds, and yet it is about the handiest thing to have, in case of moving, that I have struck. Take the ten-frame super, put a bottom board under it, take out ten frames of brood, set it in front of the entrance, close the entrance. That will catch the field bees and take along a good swarm of bees in a ten-frame hive, leaving enough brood to take care of what you have left there. Put them back in the fall. You would have to wait till your season is over for the honey to ripen. It isn't much of a

proposition to move them that way, move the field bees. You are probably right at the beginning of another flow and you want to move your field bees, and you want your young bees. Have a young queen ready to release, or let them raise a queen. You will have bees enough left, some of those hives have got bees to spare. I had six common supers and thirty-two full depth frames on one hive, twenty frames underneath, and bees hanging out in front every night in a twenty-frame, this year, with one queen. There was a big bunch of bees hanging out there every night. Those are the facts. I don't say that that queen laid all those eggs in the five weeks, but the point is this: we have got to have packing, we people in the Northwestern Association, we are all of us in practically the same climate. We have cold weather off and on up until the fifth or tenth of June, when packing feels mighty good. If you are out driving you want an overcoat on, and if it is that cold for you, what are your bees doing those nights? During the breeding season they have got to maintain a temperature of ninety-five degrees in the brood nest. A single wall hive gets really too cold, unless it is packed, and if your bees start breeding when fruit bloom comes, with weather such as we have had the last two seasons, you can have eight and ten frames of brood. You can't do that in a packed hive, no matter whether it is an eight or thirteen frame hive.

So far as wintering in the basement is concerned, that is all right, but you need protection if you take them out. Bees that will winter and come through in fair shape without any protection cannot raise a bunch of bees to store a crop of honey in this climate, without some kind of protection. It isn't the winter protection alone that the packing gives, it is protection against the cool weather later and it is a mistake if you take it off. Leave the protection on, and have a hive you can keep protected until clover bloom comes. Why not? You can get them into the basement, but you can't get them to build up in the basement in the spring, they would have to be out storing honey, they can't make it out of nothing. Let them put away a crop of honey they can make bees from. Give them protection and the room, and they will replace the honey with bees.

Mr. Stewart.—I have heard that kind of talk for thirty years, and that is all the good it does. I thought I knew how to pack bees; I thought I had a cellar as good as any of them. I go around in the spring and buy bees that have been wintered in old cracker boxes, beegums, or anything, take them home, and they are just as good as mine. I couldn't ask any better. There is no packing around them at all—what is the use of packing (laughter)?

The President.—It is true a good many of those bees do not die, but we do not count the ones that die. Mr. Stewart buys the live ones and not the dead ones.

MR. STEWART.—They didn't lose any more than I did in proportion. That is what got me.

THE PRESIDENT.—I tried wintering out of doors several years myself, with not very good success.

MR. STEWART.—You didn't have good cracker boxes.

THE PRESIDENT.—I didn't have good cracker boxes. In fact, I didn't have any outside packing at all in those days. Nobody did.

MR. WOOLDRIDGE.—Mr. President: I would like to ask these brother beekeepers around here if they have ever had any experience with hair felt packing, in place of using newspapers to use inch packing on the inside, reducing your equipment down to eight frames, then slip a special cut square that will extend down below the bottom board crack to keep the wind out there, and then use cardboard or newspaper to the extent of filling up the ends. Have you ever had any experience of that kind? It absorbs the moisture, and another one fits in on top below the super. It extends up just above the edge of both bottom and top, so it fits down nicely and makes a very snug and smooth nest. It absorbs the moisture quite well. I usually lay a burlap packing, maybe two of them, over the frames, then I lay this mat of hair felt on top of that, and I am not bothered with moisture or with mouldy combs. I would just like to know if any of these other gentlemen have ever used that as a packing?

THE PRESIDENT.—I would like to have you describe that hair felt a little more fully. I do not know that I ever saw it.

MR. WOOLDRIDGE.—It is hair felt such as you can buy at any of these ship building places, for keeping out cold or heat, either one. It answers the same purpose. It comes in various thicknesses. I use felt one inch in thickness and I have it cut at the factory. I buy mine of George B. Carpenter, over here on Wells Street, and they cut it just the size I want. Of course, I use the ten-frame hives and I reduce the brood nests down to eight frames. That gives me a chance to slip on each side one of these squares that fits exactly, then by using newspapers you can fill in the space between the end of the brood frame and the hive. You can use about eighteen thicknesses of newspaper and not crowd it, so I bind that around the corner so it makes it almost wind-tight, then it extends down to where your hive sits on the bottom board, below that crack. It also extends up just above the top of your hives sufficiently so that when you put on your last cap it makes it just like a lid, and what I like about it is it absorbs the moisture very nicely, yet it doesn't get too wet, and I have never had any trouble with mouldy frames or combs, or with condensation. When I used to use shavings for packing I used to have too much condensation, and the ventilation wasn't so good.

THE PRESIDENT.—What is the cost of this hair felt?

MR. WOOLDRIDGE.—Well, about sixty cents a hive, but it lasts indefinitely, for that matter. Sometimes when I am in a hurry I use a little cardboard on the opposite side from the hive, raise the bees and give them a little more protection that way, but usually it is kind of quilted or cross-barred on each side, and I usually just put that right next to the comb. They do not seem to interfere with it, it doesn't seem to annoy them, and the results are very satisfactory. I like it very well, and I have found it to be the cheapest in the long run.

QUESTION.—Is that what is commonly known as asbestos sheet packing?

MR. WOOLRIDGE.—No, sir. It is a real haircloth, that is all it is. It is made of cowhair. You can get it in any size you want. I would just like to hear if any of these other gentlemen have used it, and what their experience has been.

A MEMBER.—I have found it very satisfactory, although there is one objection to its use. You have got to be very careful and not let it come in contact with the bee direct or touch anything that has bees' glue in it, or it will stick to it. You can't let it touch a super cover or any of these thick board covers.

MR. WOOLDRIDGE.—You have had experience that it is not satisfactory in that way?

THE MEMBER.—Yes. It has worked out that way, if anything comes in contact with the felt itself, but if you always use muslin or burlap next to it, it is very satisfactory packing, I find.

MR. WOOLDRIDGE.—Has anybody else had experience with this kind of packing? If so, I would like to know what results have been obtained, and how you liked t.

THE PRESIDENT.—Will you give again the address of George B. Carpenter?

MR. WOOLDRIDGE.—Yes, sir. He is right over here on Wells Street, at the corner of Wells Street and Illinois. It is 436 North Wells Street.

MRS. HAMMET.—I would like to ask the gentleman if he uses this in summer.

MR. WOOLDRIDGE.—No, ma'am. I leaves it on till late in the season, and when the heat isn't needed I remove it, but of course we are like our friends over there. He wants a little packing, and I am inclined to think that we need protection for our bees on cool nights in the spring, but it certainly is a good thing as a cold stoppage either way.

MR. ROEHS.—Mr. President, I think you can get that stuff at some of these places where they wreck cars, they use it for refrigerator cars.

MR. WOOLDRIDGE.—Yes, that is the same kind of hair felt.

MR. BROWN.—They give it to them for nothing.

A recess was then taken by the meeting.

THE PRESIDENT.—In order that we may get this into the report, you are requested to give your name whenever you rise to speak, so the stenographer can get it.

I want to call attention to the government bulletin on Comb Honey Production, Farmers Bulletin 1039, by George S. Demuth. This is the best treatment of the subject I have found. You can get it free from the Department of Agriculture at Washington, by sending a postal card requesting the bulletin.

I wish to call your attention also to the fact that the secretary of the Chicago Northwestern Beekeepers' Association is very anxious to get your names on his list, with your dollar and a half. This dollar and a half entitles you not only to the membership in the Chicago-Northwestern Association, but also gives you membership in the Illinois State Association, and gives you a little book which is worth more than half the price of the membership. The book is a published stenographic report of both this meeting and of the Illinois State Association, which meets at Springfield. The dollar and a half admits you to both associations.

We will now have a talk by Mr. Wooldridge, explaining a device for comb honey production. Mr. Wooldridge.

Mr. J. R. Wooldridge next explained a device or mode of fastening foundation. It consists of a slot or saw-kerf cut in the section for the insertion of the foundation.

THE PRESIDENT.—If there is nothing further, we will take up the questions handed in. The first I have is: Who has had experience with an electric bee heater? If the gentleman that wrote that question will enlarge upon it a little, perhaps it will help to get an answer.

MR. WOOLDRIDGE.—I asked the question myself. I wanted to hear from these other gentlemen.

THE PRESIDENT.—To heat the bees in the hive?

MR. WOOLDRIDGE.—Yes, sir. Use a little heater for that purpose. The principal trouble with that at the present time is the cost of it.

THE PRESIDENT.—People out in the country wouldn't have the electricity.

MR. WOOLDRIDGE.—That is quite true, but there are a good many people that do have electricity, that could be gotten to the bees all right, but it is the purpose to keep that with such a low current that there is absolutely no danger of fire. Of course, it would be naturally in asbestos for the purpose of the prevention of fire, eight by ten, right on the plate would be large enough ordinarily, for the ordinary hive or colony to cluster underneath, and would be just right, nice and warm. That is all there is to it, barring the fact that they create some heat themselves, and it does away with the moisture. I would like to know if some of the gentlemen haven't tried it out a little more than I have.

THE PRESIDENT.—That mode of keeping the bees warm would have to be confined probably to city beekeepers. Out in the country where ninety-nine out of a hundred people have bees, it would not be practicable, because current would not be available. Furthermore, it is quite expensive.

MR. WOOLDRIDGE.—Not necessarily, the equipment is not so expensive.

THE PRESIDENT.—Not the equipment, but the current.

MR. WOOLDRIDGE.—You see, Mr. Miller, it is such a low temperature that the cost would not be as high as you might think for, but at present it is a little expensive to put a whole apiary under, but as an experiment, it is all right. It certainly takes care of the moisture pretty well.

THE PRESIDENT.—It is quite practicable to use electric current for imbedding foundation, as probably a good many of you people know. Here is another question: Is the practice of placing a decoy in an apiary a success for catching swarms? Has anyone had experience along this line?

A MEMBER.—I would suggest that you try it. I get a good many of my neighbors' bees that way. (Laughter.)

MR. WOOLDRIDGE.—I see the State of California has made a law prohibiting that. It must be successful, or they wouldn't make laws against it.

MR. LYMAN.—Probably you have all noticed bees flying around during swarming time, around the top of the hive, coming and going where there has been nothing for them to rob. They are certainly scouting around, looking for a place, trying to find a location. I have gone to a yard and found as many as three swarms there which had arrived during the week, of black bees.

MR. RORDA.—I can't speak for myself, but my brother got something like twenty swarms, just by putting hives in trees, and putting in a piece of comb.

MR. KOELLING.—I have seen pictures in some of the bee journals where whole apiaries were composed of bees gathered that way, in Texas.

THE SECRETARY.—I might say that is where I got my start in beekeeping. I got some empty hives and caught some swarms, six or eight. (Laughter.)

THE PRESIDENT.—That seems to be a success in some places. The next question is, can you feed sour honey to bees, if you boil it before feeding? Who will answer this question?

MR. STEWART.—Will they take it?

THE PRESIDENT.—Has anyone had experience in feeding sour honey, after having boiled it, feeding it to the bees? I wouldn't advise you to do it for winter feeding, but it is all right in the spring in rearing brood. I have fed honey of that sort. I wouldn't feed it late

in the spring so it would go into the supers. If you boil the honey you get rid of a good deal of the sourness. The sour part of the honey it seems is driven off and forms in a froth or scum at the top, and can be skimmed off. The rest of it isn't so sour, although there is some taste to it of sourness, but it is all right for feeding the bees for breeding purposes in April and May, in this locality.

QUESTION.—What is the cause of sour honey?

THE PRESIDENT.—Too much water in it, either the bees have not evaporated it or water has been added to it or been absorbed by it later on. In most cases it has not been evaporated down by the bees.

At this time Mr. Dadant acted as chairman of the meeting.

Mr. Miller presented the following plan of manipulation for the production of comb honey:

MR. MILLER.—I do not profess to be an expert in the production of comb honey, but I have studied the most modern methods of comb honey production and have put them into practice to some extent, and it has proved so far successful. I will say one of the prime conditions for success in comb honey or extracted honey production is to have good, strong colonies. We have had that preached to us a good while. In order to get those strong colonies I would start the year before. I would see that every colony has a good queen, preferably a young queen, and that every colony has sufficient stores as early as August, and I would examine them later on, in the latter part of September and October, and if necessary again in November, before they go into winter quarters, to see that every colony has plenty of stores to carry it through the winter. Now, a young queen isn't always the best queen. I woldn't advise re-queening every year, but I think a queen ought not to be in August more than a year old, so that the coming year she would not be more than two years old. There are exceptional queens that might be carried over if they are very good stock, but for ordinary purposes we will say a queen ought not to be more than one year old, at the time we begin to prepare them for winter. Be sure that they have plenty of food to run them through the winter. Of course, the wintering problem is a very important one. I will not go into that deeply. I prefer the cellar. My winter losses in the last ten years have averaged less than one per cent each year and the loss was not due, in my opinion, to the wintering, but to queenlessness or something of that sort. They should have protection in the spring, and it is very important that they should have plenty of food in the spring as soon as they begin breeding, and especially between fruit bloom and clover. A colony that is strong in early spring is very apt to eat up all the available food it has and run short of stores after fruit bloom. In some localities we get enough honey in fruit bloom, in others there is very little, and if a colony is very strong in early spring it may eat up that honey, and during the period—usually two or three weeks, between fruit bloom and clover,

may run short of stores and the colony starve, or they might run short of honey to such an extent that the queen would stop laying. As Mr. DeMuth in the bulletin to which I have called attention, has stated, the bees which gather the crop are those reared within six weeks of the opening of the honey flow. For this reason you can readily see the importance of having plenty of food to keep the queen laying. Counting back six weeks preceding the clover flow, if the clover flow starts, say about the first week in June, would bring the date about April 20. From this time on to the opening of the clover flow it is important that they have an abundance of food. If we allow those bees to become short of stores and the queen stops laying from fruit bloom to clover, you can see that there would be comparatively few bees to gather the crop.

It was Mr. Doolittle who advocated a scheme for comb honey production a number of years ago, a plan in which he put a second hive body on top of the first hive body, about the time of fruit bloom, provided the colony is sufficiently strong, with queen excluder between the two. This second hive body contains some honey to carry them over this period from fruit bloom to clover, when they are apt to run short of stores because of the large amount of brood. In this second hive body the outside combs should be combs filled with honey kept over from the previous year. I would give them combs filled with honey at the outside, then in the middle place an empty drawn comb or perhaps two of them. The remainder of that second hive body is filled up with full sheets of foundation. This carries them over this starvation period and until the clover flow begins. It sometimes happens that the clover flow does not materialize. We may have three or four weeks of bad weather, and should be sure that the bees have plenty of honey to carry them through.

At about the beginning of the honey flow I take away the entire lower hive, with all the brood--not a part of it only. Don't leave one frame, or any brood at all. But this second hive below and shake off the bees in front of the hive. When you take out the brood you can find the queen and see that she goes into the hive with the bees. Of course, if they are black bees it may be easier to shake off the bees in front of your top hive, which you now put down on the bottom board. Let us see how this works out. The bees now have two combs of honey on the outside, to protect them from starvation, in case they need it. In the middle they have empty, drawn combs. If during the fruit bloom they have filled this up, it will probably be necessary to change them, but up in this part of the country we do not get enough in fruit bloom to fill up the upper hive very much. Now the remainder of the hive, being filled with foundation, forces the bees to store their honey in the supers which are put on, at this time. If drawn combs were placed in this second hive body, the honey would go into those combs instead

of going into the super, but by filling out with foundation, it forces the honey into the supers. The condition of the colony now corresponds to that of a new swarm in natural swarming.

There is another process which is used by a good many peeople, which makes a break in the brood rearing of nearly three weeks. It corresponds to the parent swarm in natural swarming, and that is to remove the queen and after about ten days or two weeks, re-queen. Here are two processes corresponding to the two processes of nature, one corresponding to the new swarm and the other to the parent swarm. There is another advantage in this, in that it does away with the rearing of much brood at a time when the bees are storing the honey. Brood reared during the honey flow does not produce bees that gather honey during that flow. Suppose a clover flow begins the first week in June and lasts, we will say, five weeks. The bees reared in June will not help to gather that crop of honey, and if you have a fall flow these bees will be too late to gather the crop in the fall, but by using the scheme just outlined, you get rid of the rearing of this immense quantity of brood during the honey flow. The bees give their undivided energy to the storing of honey, and by putting the foundation below this honey is forced into the supers and will result in a maximum crop, providing you get the nectar.

Now, it sometimes happens that we can get some comb honey in the fall of the year. Sometimes in August there is a flow from heartsease and other flowers that bloom at that time. I would use the same plan in that as for the clover flow. That is, I would take the brood away at the beginning of the flow.

This plan that I have outlined here may not be complete, and if you have any questions I would be glad to answer them if I can.

QUESTION.—What do you do with the brood when you take it away?

MR. MILLER.—I usually start a number of nuclei about the time of fruit bloom, and build them up into full colonies by using the surplus brood.

QUESTION.—That first method of yours is simply the shaking method.

MR. MILLER.—It is the shaking method, but it is modified in such a way that it is more effective. You retard the brood rearing in the hive that is storing the comb honey. By using foundation you force this honey that they bring in, into the supers. Another advantage is this: that the bees will not swarm out or abscond. If you take another hive and give them just bare foundation without anything to start on, and no honey, oftentimes they will swarm out, but I do not remember of having a colony abscond in the last ten years with this mode of manipulation.

QUESTION.—What do you do with your excess combs that you draw out every year?

MR. MILLER.—For several years I have been melting up those containing drone cells and have been increasing the number of colonies so that I could use all the good combs that I have.

QUESTION.—Doesn't it take a good many old bees to take care of that new brood?

Those old bees are taken away from the field, and they will have to do the nursing and take care of the young brood.

MR. MILLER.—When you shake these bees, you shake off all the bees, young as well as old.

QUESTION.—I mean the hive you had on the top story, you put it down and put a queen down below and have a full force of worker bees, but this queen will begin to lay in the new hive, and it will take a good many field bees away from the field to nurse the brood.

MR. MILLER.—It will take some of them.

You must remember that we shake off not only the old field bees but the young bees under two weeks old, and whatever brood is started they can take care of.

MR. DADANT.—If your flow lasts more than three weeks you have a complete cycle in your hive and your honey flow is going to be cut off, because the greater part of the bees are busy feeding the brood. If your queen is a prolific breeder she has a lot of bees that need attention after your flow begins, and I can see where you would have a very big advantage. We have often noticed that when we shake off colonies that have foul brood. They will be like a new swarm for three weeks, very strong, but at the end of that time your old bees will begin to dwindle and your young bees haven't started out yet, so although your flow is good you may not get very much honey. This seems to be all right for a short flow but not for a long one. Of course, you have had experience and we haven't, in comb honey, but that is the way it works out in extracted honey.

MR. MILLER.—The plan may not work so well where there is a protracted flow, but after three weeks there will be a new crop of young bees to feed the brood.

QUESTION.—Instead of putting down that upper story, why not stick in one or two frames of brood and make them contented? That is what I do.

MR. MILLER.—I have tried that and I find in a great many cases they start cells and swarm.

A MEMBER.—I think Mr. Miller's theory is good, for one particular reason because it overcomes swarming. As I understand, it is to a great extent the theory which you have adopted?

MR. MILLER.—Yes, it practically eliminates swarming.

THE MEMBER.—Of course, there might be some effect on the honey flow, which Mr. Dadant speaks of, but I think it is a great advantage to know how to overcome natural swarming.

QUESTION.—Do I understand that you have a comb of honey on each side of the brood nest and all the rest is foundation?

MR. MILLER.—You have empty cells for the queen to start on.

I put a drawn comb in the middle. The two outside combs are honey and the rest of it is full of sheets of foundation.

QUESTION.—Then you should have seven sheets of foundation, two combs of honey, and one drawn comb?

MR. MILLER.—Yes.

A MEMBER.—The objection can be met the way Dr. Miller meets it. He sets the brood to one side after the brood have hatched, shakes the brood that has hatched, over that hive.

MR. MILLER.—That is a very good plan with this exception, it requires an extra amount of labor to do that, and where you have hundreds of colonies you can't handle it very well.

THE MEMBER.—Then the other way is to use Mr. Dadant's big hive and not have any swarms.

MR. MILLER.—Mr. Dadant raises a great number of bees to eat up his honey.

MR. DADANT.—But you have got bees to gather the honey. How long does the honey flow last? Can you tell ahead of time? It may last all the way from one week to eleven, depending upon the kind of weather. Langstroth says in his book, keep your colonies strong, and that is what we have always practiced. Of course, I want to say that we do not produce comb honey, but we do produce extracted honey, and we think keeping your colonies strong is the thing winter and summer.

MR. MILLER.—In my experience two years ago I had some exceedingly strong colonies full of brood. They had quite a lot of honey, I found by September they had eaten much of it up, and brood reared some of them one hundred and fifty pounds or more in the hive, but in June ate up the honey and died before the full flow came.

I want to call your attention to the fact again, I mentioned it awhile ago, but perhaps we didn't all get it, that these two processes I have presented, one of removing the queen and re-queening later, and the other of shaking, corresponds to the two processes in nature. That is to say, one colony has no queen for a period of about seventeen or eighteen days in natural swarming. After the prime swarm, I believe it is about seventeen or eighteen days before the young queen begins to lay, which stops broodbearing during that time. That eliminates later swarming in case of a natural swarm, and in case we remove the queen and re-queen later that will perform the same office and accomplish the same results. In the other process, that of shaking and taking away all the brood, we have what corresponds to the new colony in natural

swarming, and it does away with practically all the swarming, whichever method is used. There is some advantage in one method and some in the other, and it reduces brood rearing in that particular colony during the month of June or whenever the flow occurs.

QUESTION.—What is the idea of setting that story on top? Wouldn't it work just as well to have that second story below?

MR. MILLER.—If you put that story on top your brood is below. The tendency of the queen is to work upwards. If you put that below and the other on top, the queen would stay in the upper one, and would not use that one below at all. If you put the second hive body below with the foundation in, they will not do very much there, but if you put it on top then they will store some honey there. It takes the surplus honey which may come in at fruit bloom, and it also provides, when you put it down, a place for the brood. If they have to store a lot of honey in this second hive body, fill up the combs as they sometimes will do, the bees may swarm before they carry it into another super that is put on top, but if you take it in time, before they get too much honey, along the first part of clover flow, it s all right without any other change.

Now, as to the advantages. The work of manipulation is very little. There are many other methods of handling bees for comb honey production, but it requires too much labor. If you have out-yards this plan will work out with very little labor. In the first process, that is, the process of removing the queen and re-queening later, you remove whatever cells may be started and give them another queen. In the other process there is only one manipulation, that of shaking and distributing your brood to the other hives. That can be worked where one is not obliged to watch the bees all the time, in order to raise comb honey. It is a difficult matter to produce comb honey in out-yards without the bees swarming.

QUESTION.—Do you think a ten-frame hive would raise all the bees necessary for a swarm of bees?

MR. MILLER.—They have two ten-frame hives to begin with, but the brood is below, of course, and the queen fills that eight or nine frames at least with brood, and I think that is enough. If you have got a larger hive it will not work out so well in comb honey as it does with extracted honey. A good many people advocate an eight-frame hive because they claim ten is too big for comb honey. We put that top hive down and the two outside ones are full slabs of honey capped up. That reduces the queen to eight frames instead of ten.

QUESTION.—I understand you are in a clover honey section. Do you practice that system on your fall flow?

MR. MILLER.—Sometimes we get honey in August, and we practice that system about the time the flow begins.

QUESTION.—A good many fall flows start about the middle of June and last till frost. It wouldn't work then, would it?

MR. MILLER.—If there is a long-drawn out flow, I don't believe I would try to produce very much comb honey, I would produce extracted honey. Don't forget to put on a sufficient number of full depth combs for the bees to fill up for feeding the next spring. You will find, if you go through a colony, that some colonies that are comparatively heavy along in September will be too light in October or the early part of November, and wherever you find a light colony take out the empty combs and put in the full ones. It is the easiest and best way, I believe, of feeding bees. You about have to do that where you have a good many colonies.

QUESTION.—Does your honey granulate?

MR. MILLER.—Not very much. We usually get some golden rod honey in the fall. It is a dark honey, and dark honey doesn't sell as readily as light honey, so we use that for feeding purposes in the spring.

A MEMBER.—Have you a practice of spreading the bees in the spring?

MR. MILLER.—I never do that. I don't have time, for one thing. I don't know that I would do it anyway. I don't believe there is enough profit in it to make it advisable.

MR. STEWART.—I don't think it is a good plan any time.

MR. MILLER.—The main thing is to give them plenty of room, plenty of food and rear plenty of bees to keep the brood warm, and then when a swarming season comes on try to curtail brood rearing as much as possible.

At this time President Miller occupied the Chair again.

An auditing committee was appointed and the meeting adjourned to meet Wednesday, December sixteenth, at nine-thirty A. M.

WEDNESDAY MORNING SESSION.

THE PRESIDENT.—The meeting will please come to order. We have with us Mr. B. F. Kindig, president of the National Beekeepers' Association. This afternoon Miss Fowls will discuss her subject. Mr. Kindig's subject is beekeeping. We will now hear from Mr. Kindig.

MR. KINDIG.—Mr. Chairman, ladies and gentlemen: We hear a great deal about the beekeeping industry, but when we begin to ask some pertinent questions as to really what this industry is, we have a variety of answers. A short time ago there appeared in "Poultry Success" an article which set forth that beekeeping is a family stunt, or as the editor said, a side-line stunt, but for dollars and cents you better stick to chickens. Well, I suspect there are people who are not closely familiar with the beekeeping industry, I find that there is a large number of people engaged in beekeeping, whose memory takes them back to the old days when their old grandmother had a few skeps somewhere arounde the back of the premises, and in the summer a little honey was taken off. I feel that we should have more publicity in this country, and among beekeepers themselves, as to what beekeeping is. I know it took me ten years to outgrow the idea that beekeeping could not be anything but just a very insignificant sideline on the farm. After all my years of beekeeping experience I am now ashamed to admit that with something like twenty colonies I had only one movable frame hive. I am not alone in that, although there are lots of others who are still in the same class. I am glad to say that with the extension of state and of course, government work, beekeepers are being brought together so that they are being informed of what beekeeping really amounts to.

Well, this fall I have a very attractive little stenographer in my office, and our students in beekeeping swarm about the office in considerable profusion, and we have been "kidding" her more or less about becoming the wife of a beekeeper, and finally one day she said to me, "If I should happen to marry a beekeeper, what would be the prospects of me starving to death?" (Laughter.) Well, just previous to that time I had started a little movement to get together some real information about what the beekeeping industry is. I sent out sheets all over the State, for information to be gathered for that purpose, sixteen hundred questionnaires, in which I asked beekeepers some very personal questions about their business. I stated on that blank, that "It is necessary, in returning this blank, to put your name on." I felt that certain beekeepers wouldn't like to tell some things for public information, although

their names will never be mentioned, yet they wouldn't care to tell the actual facts of their business. So I stated that they need not place their name on the sheet, simply return the blank filled out otherwise, sending me the information that was requested, rather than the names. Up to last Saturday morning we had received out of that sixteen hundred names six hundred and forty-seven replies. I might say that I came back the second time, however, to get that high number, and there were one hundred or a hundred and fifty still on my desk, still untabulated, and so I want to give you now some of the results of those questionnaires, because in my estimation it sheds a very valuable light on what beekeeping is.

I want to say in explanation of who these people were, that this was not a hand-picked list at all, but we simply started down a list of beekeepers whose names we happened to have, and took the first sixteen hundred as we came to them. This list does not include the statistics of our largest beekeepers. Our very largest beekeepers conscientiously refused to answer the inquiry. There is no beekeeper on this list that has over five hundred colonies, and only one of them that has over four hundred, so there are several of our most successful producers that are not on the list at all, and I believe the list will give you a pretty fair idea of the statistcs, of what the industry is in Michigan. Of course, I must confine my talk to Michigan because that is about all I know. When it comes to the country in general, someone else will have to speak for that, but out of the six hundred and forty-seven beekeepers who made returns, two hundred and thirty-one of them had less than ten colonies. Those beekeepers averaged four and one-third colonies each. They produced two pounds of comb honey to one pound of extracted honey in this place.

I have divided them into various classes, and their gross income per colony is, figured at twenty-five cents for extracted honey and thirty-five cents for comb, seven dollars and eleven cents. I wish I had a blackboard I could put this on, it would mean so much more to you. You know how it is, in taking a bunch of figures, about thirty different totals, by the time I get through I know what the confusion will be. That is why I say I wish I could get it in front of you where you can see it. If you will just remember this class of the smallest beekeepers makes an average annual gross income of seven dollars and eleven cents per colony, that part of it will stick probably. I want you to notice the graduation in numbers as the fellow gets away from the sideline and gets into the industry.

The next class into which I have divided these beekeepers, arbitrarily, is from ten to twenty-five, less than twenty-five, and ten or more, and there were one hundred and fifty of these people whose average income per colony was eight dollars and forty-five cents, and their comb

honey production was forty-seven per cent of comb honey and fifty-three per cent of extracted.

In the next smaller class which I gave you before, there was seventy-one per cent of comb honey and in this case there is forty-seven per cent of comb honey.

Now, in the next class, which is from twenty-five to fifty colonies, their gross income was ten dollars and seventy-five cents per colony, and our production of comb honey fell down to thirty-five per cent—seventy-one in the first, forty-seven in the second, and thirty-five in the third. In the next class, or rather in the class from twenty-five to fifty, then in the next class from fifty to one hundred colonies, their production of comb honey is twenty-two per cent. In the class before it was thirty-five, and their gross income per colony was $12.09, and it was $10.75 in the one previous. Then in the next and last class, the class that I will call professional beekeepers, the class where I consider the beekeeping industry begins, is a class with one hundred colonies or more, and of those there were seventy-seven out of six hundred and forty-seven and their production of comb honey was twelve per cent, and their gross income per colony was fifteen dollars and seven cents.

Now, to get this a little more firmly fixed in mind, let us go back and go over some of those figures as they compare, beginning with comb honey production:

First class	71 per cent
Second class	47 " "
Third class	35 " "
Fourth class	22 " "
Fifth class	12 " "

Now, notice the decrease in the production of comb honey—whether this is contributory or simply incidental to it I do not cary to say—but with the increase in the number of colonies the gross income is this:

First class	$ 7.11
Second class	8.45
Third class	10.75
Fourth class	12.09
Fifth class	15.07 per colony

This professional class of beekeepers average two hundred colonies per beekeeper—199.7 colonies per beekeeper, call it two hundred in round numbers. That was their average number of colonies, and their average income for that number of colonies was $3,009.48. Those are the figures with which I answered the stenographer's question of, "What are the prospects of starving to death?"

A MEMBER.—Did it satisfy her?

MR. KINDIG.—Yes, I think she decided that will be all right (laughter). I maintain that even under the present high cost of living, with an average of seventy-seven beekeepers, and in this list was one

beekeeper of four hundred and fifty colonies, whose production for this past season was less than a thousand pounds of honey, we have got the bitter and the sweet mixed together. I believe that when the average income is as great as it is at these prices, which are the prices of this last year—this is supposed to be an average of several years, but the prices were taken arbitrarily for this past season—that when a man with two hundred colonies can be assured that if he is an average man and has an average equipment and has an average honey flow and an average market, he can make some money, that more people will be interested in bees. Some people will object to this being an average market, but these are the prices that these beekeepers got, according to their own statistics, wholesale and retail, both averaging together—twenty-five and eight-tenths cents a pound for extracted and thirty-five and eight-tenths cents a pound for comb. I will call it twenty-five and thirty-five, to make it easier to gure. If an average person under average conditions in Michigan can be feeling fairly sure, at the present prices, of having an average gross income of three thousand dollars for two hundred colonies, I maintain that he can feel quite certain of making a living and having a little something left.

MR. STEWART.—You have a lot of "if's" in there that knocks the whole thing.

MR. KINDIG.—Yes, that spoils the whole thing, I know, but then I will give it to you for what it is worth.

I want to take up another line. The average income per beekeeper for the first class having less than ten colonies, is $30.81 per year. We will just run down through the next three classes to the professional: second, $135, third $365, fourth $785. Now, it looks to me as if there is there a very clear line of demarcation between the place where beekeeping is a side line and the place where it becomes a business. Now, in regard to the volume of this business I want to submit these figures. The total amount of extracted honey produced by this whole group of six hundred and forty-seven beekeepers was one million and twenty-nine thousand pounds, of which the professional beekeepers produced seven hundred and nineteen thousand pounds. Over seven-tenths of the whole volume of honey was produced by seventy-seven of the six hundred and forty-seven beekeepers, that is in extracted honey. In comb honey the whole amount produced was two hundred and fifty-one thousand pounds, of which the professional beekeepers produced one hundred and four thousand, and those that are not professionals or below the one hundred mark, one hundred and forty-seven thousand, so it looks as if the comb honey of the country, or the comb honey of Michigan, is being largely produced by the non-professional beekeeper; it seems to indicate that professional beekeeping or the beekeeping industry means the production of extracted honey.

I was quite surprised at these figures, I admit. There are a lot of things in here that were surprises to me. We had felt that we knew some things about the beekeeping industry, but our knowledge has been generalized. It was not specific. That is the reason why I got these figures, so we can have some really specific things to talk about. We well know just what is being done in dollars and cents or pounds and colonies.

One of the first questions in connection with any industry is, "Are the returns of that industry sufficient to warrant the investment of capital?" Now, it seems to me that that question is pretty well answered in the statistics of the professional beekeepers with a great income of three thousand dollars from two hundred colonies of bees, fifteen dollars and a little more per colony. Those men who are operating on that scale in general are satisfied, or at least largely satisfied, with the returns which they are getting for their labor and their capital invested, and there is today—you have seen it, I presume—a tendency on the part of men with capital to get into beekeeping, not that they will get into it, but there are a considerable number of men with capital who have seen what professional beekeepers are doing, who are willing to invest their money against the other man's knowledge. A very striking example of that came up the other day at a hotel in Lansing. A certain person in Michigan made a statement to several professional beekeepers in a little group, talking, that he believed that he would try to get together a certain amount of capital, not only for the purpose of increasing his bee business from what it is at the present time, but for the sake of taking on in addition a bottling and distributing business, and among those four or five men gathered there—now, these were beekeepers, of course—more than enough capital was offered at that time to finance the enterprise. To me that was an excellent illustration of the confidence that the beekeepers themselves have in their business. I believe that there is more confidence, and that beekeepers are looking ahead with more certainty to the outcome and to the future of beekeeping than they ever have before. I believe that in general we are standing on the border line between a side line and an industry, today. Certain beekeepers have gotten over into the professional class. I believe that others will follow very fast in the next ten or fifteen years.

In connection with an industry, one of the things that is essential to the stabilizing of any industry, and to its success, is the assurance of an adequate supply of the product, and there is a place where beekeeping runs into one of its first shortcomings. The supply of honey produced today is not adequate for the twelve months of the year. You well know what a large part of the year many of our retailers are without honey. In general, most of the stores will have honey up to Thanksgiving or Christmas, a little period of four months or so, in which they have a supply, but during the remainder of the year the public is compelled to

go without what they would otherwise purchase. You may say that that is not because of the supply but because of inadequate distribution. All right. That may be it, and if it is, that shows us again one of the shortcomings of the industry. I hold that we must consider beekeeping not as a real industry until the supply is sufficient to extend over the whole territory, and the distribution is taken care of, so that the whole public may have this product all through the year at any of the ordinary places where it is disposed of.

It seems to me we will have to eliminate a good many things in this beekeeping industry before it will reach that place that we are all looking forward to, before it will reach the proper place in the minds of the public, and one thing in connection with an industry of any consequence is a national advertisement. There has been a little national advertising, but it has only been a little. The A. I. Root Company I think have done the bulk of the national advertising of honey, and it really is only a drop in the bucket to what other food products are getting in the way of national advertising. You people are familiar with what has been done by the cooperative producers of lemons, oranges, raisins, and that sort of agricultural product, which it seems to me are no more susceptible to treatment of this kind than honey is. As I look at it, the industry is yet in its stages of infancy and will eventually get to that point where we will have this national advertising, wide distribution and continuous supply.

Another thing that seems to me very essential is a standardized product, or as near a standardized product as honey can be. We have had for years national grading rules of various kinds. You know how effective they have been, if a man sold his honey according to what he had. There hasn't been any standardizing of labels, for instance, in such a way that the producer may know when he looks at a package that it is a certain grade. Take as an example of what I mean, Karo corn syrup. There is one sort of a label that indicates just ordinary glucose. That is all it amounts to. A second kind of label indicates that it contains fifteen per cent sugar syrup. Another label indicates that it is a certain per cent maple syrup. Now, the public knows those labels and they know that when they buy that package they are going to get a certain sort of product. It seems to me that honey to a considerable extent can be treated in the same way, when we once reach that period in our industry where it can be handled. As it is at present, I don't think it can, except in a very, very small way. Our industry is yet in its beginning. It looks to me as if it were just in its infancy. Now, any industry of any consequence which is attractive to people ordinarily is subject to future development, and from the statistics that we have available the honey producing industry is capable of being developed tremendously from what it is at present. Taking it from Dr. Phillips' book on beekeeping, I think he states in there that probably less than

ten per cent of the possible amount of honey is produced in the United States at present. At the same time I think we will all admit that less than ten per cent of the possible consumption of honey is being consumed in the United States at present. Now, if those two things are true, we see we have before us a nine-fold development yet to come before we would reach the maximum production and the maximum consumption of honey. We are gradually working that way. It seems to me that there is at present more than there ever has been in the past—at least there is to my knowledge—a tendency on the part of beekeepers to keep bees more extensively. I meet from time to time men who say, "From now on I am going to let someone else farm the farm. I will devote my entire time to bees." There is growing up in this country a bunch of young men and young women who today yet are amateurs, but who in a few years to come will be professional beekeepers.

The work of the Bureau of Entomology in its extension service throughout the country and their extension service of the various states and the offices of the state inspectors and the agricultural colleges, all those departments of the work are bringing to bear pressure on the young man and the young woman who has a natural inclination toward beekeeping. It is teaching him or her that there is a future in beekeeping which is sufficiently attractive to command the time and the ability of any young man or woman, regardless of how well they are gifted mentally and physically, and that work is developing a large number of young people who in a few years to come will stand in this class of one hundred or more.

Now, those people are not going to stop at one hundred. Not by any means. I could name a large number of them, just in Michigan, who are sort of feeling their way, learning as they go, but gradually increasing to the point and looking forward to the time when their entire income and their entire time will be taken up in beekeeping. It seems to me that we are right on the threshold of a tremendous development, and I want right here to give credit to Dr. Phillips for a large part of the agitation which has brought about this activity along the lines of education in beekeeping.

In connection with all this matter of education and of advertising and of distribution, and of broadening the field of beekeeping—for I feel that every state ought to do something in the way of making a survey of its honey producing resources for the benefit of those who desire to get into better locations or those from other states who wish to come in—I think every state owes it to its beekeeping industry to make a survey of that, of those things which will tend to better beekeeping, and along with all this development there must come better organization, or organization, but it is about these better conditions, whichever way we want to put it.

We have in the United States at present a very large number of beekeepers' associations; I wouldn't attempt to state the number. Our Chicago-Northwestern here has been running for a number of years. The Indiana, Michigan, Illinois and Wisconsin asociations have been in existence and have been doing good work for a good many years past. We have more recently come to the development of county organizations, through which we are able to get hold of these smaller beekeepers. These fellows in that first class, in that second class, would always stay in that class probably, if they were not forcibly taken hold of and jerked out of that class by having their vision of the field broadened through contact with bigger and better beekeepers, so that they can commence to see that this little side line that they are running has tremendous possibilities. We need in this country a big strong organization of beekeepers, we need a national organization of beekeepers. Your president introduced me as president of the National Beekeepers' Association. It makes me smile every time I think of it.

MR. STEWART.—Others do, too.

MR. KINDIG.—Yes, others do too. Now, that very fact indicates that there is something wrong, that the National Beekeepers' Association is in need of a doctor, that it needs an overhauling or something of that sort, or that it needs being kicked into the rubbish pile and a new association organized or something of that kind done. Friends, I think you will all agree that the beekeeping industry does need a strong national organization that may in a manner direct the education of beekeepers. We need it for its educational value, we need it for its social value, and we need it for its legislative value. No one will contend that the National hasn't served an excellent purpose in its legislative function down there at Washington. It hasn't done all that it might do. I will admit that, but it has done a good service, and that service should be continued and be made greater, made more effective. As you have well expressed, the national stands in disrepute before all people to a large extent who are interested in beekeeping today. The beekeepers themselves do not think a great deal of it. I have reason to believe that the bee journals do not have much higher regard for it, or that the bee supply manufacturers really don't think very much of it, and in correspondence with state inspectors and state workers I find that they are not particularly interested in it, and that even our government men under Doctor Phillips in the Bureau of Entomology do not take a very serious interest in it and our membership list will prove all those things. We must have a central organization of some kind. The interests of the beekeepers must be looked after in a national way. Each little individual community cannot solve its own problems. There are problems that are more than of state wide importance, more than just of local importance, and those things must necessarily be taken care of by some central organization. Some of you people were here last winter over

in the LaSalle Hotel, at the meeting of the National, and you will recall that a committee was provided for, that should meet at Kansas City in January of this coming year, and that that committee should diagnose the ills of the National Beekeepers' Association and should prescribe for it in one form or another. One of my purposes in coming here is to plead with your people to send a representative beekeeper to Kansas City this year, to take part in what will in my opinion be a reorganization of the National Beekeepers' Association along such lines that the beekeepers, the bee journals, the supply manufacturers, the extension workers and the government officials can all cooperate and come together on one plan and platform, and that all of them will work together for the common good of the beekeeping industry.

Now, if you people don't send a man down there, and Indiana doesn't send a man, and Ohio doesn't send a man, and all of these other states don't send anybody, who is going to represent the beekeepers of your territory? Who is going to express the sentiments of this association? I contend that that committee need not be large, but it must be representative, it must represent all interested classes, and you will all agree that all of these five classes which I have named have a right to be interested in the National Beekeepers' Association. So I ask you to try to make some arrangement in this convention so that you will have at that meeting someone to represent the members of the Chicago-Northwestern Beekeepers' Association and the beekeepers of your territory. I feel that this is a very critical time. I feel that this year the National will either live or die. It is not going to die for long, I do not think that. There is too great a demand, there is too great a need of a national organization. It can't die for a great while. If you choose to let it die some other group, some other beekeepers, will get together and will build up another national, but will it be built up along the lines you people would like to have it built up on, so that it would be for your interest? There are a lot of questions that will come up at that Kansas City meeting, and I can't take your time now to go into a discussion of all of it, and it probably would be wasting a lot of time if I did, because what must come about will be, it seems to me, a balancing of the interests as against the west and a balancing of the interests of these various five different classes of people who are interested in this one thing, a general compromise of all the interests to a large extent, and the mapping out of one broad general and conservative program, launch a national organization which will work for the betterment of the industry. And so, again, I ask you if you can at all, if it is within your power to send someone to that meeting, I personally feel that it is your duty to do it. (Applause.)

THE PRESIDENT.—I think we all appreciate what has been said by Mr. Kindig. I think myself it is very important for the eastern associations to be represented at that meeting, to serve their interests, for as

he says the other interests will be balanced against the interests of the east and the east should be represented by members from every state association and from every other association of considerable importance.

MR. KINDIG.—May I just say another word in that connection? As the situation now stands, if the east is not represented the national organization will cease to be a social and educational institution. It will become a purely commercial organization, which will have for its purpose the selling of the co-operative producing west. Maybe I shouldn't make that statement in public, but I tell you, friends, right from the bottom of my heart, if you people here in the east don't get a man to Kansas City that will hold up the contention of the people of the east, the next national organization will be a western product, and you know what that means to eastern beekeepers.

MR. SMITH.—Mr. Chairman, I am sorry this came up just at this time. I am so interested in Brother Kindig's knowledge of beekeeping that I am sorry he mixed the two. We have a small number here this morning, and that is one reason that we do not have a large number, because we are not giving the people what they want.

Brother Kindig's address on beekeeping is well worth three days of my time if I didn't get anything else, as long as he stuck to beekeeping, but when he gets into organization he is getting into something that I know ten times as much as I know about beekeeping. It is just as he says, that organization that meets at Kansas City, if I am a judge of human nature and is past experience is worth anything to me, is going to be carried on and handled by the commercial beekeeper. One of the smoothest pieces of organization that I ever saw take place took place in the National Beekeepers' Association in the LaSalle Hotel last February, and I have seen a lot of them, among some of the best organizers in the United States. The smoothest piece of business that I ever saw was pulled off there, and it cost that association thirty or forty members right there. A man who came from Iowa talked to me for the purpose of joining that association. He says, "If that is an indication of what this association is going to be, I don't want to belong to it." I want to ask Brother Kindig if this is not true: there were about seventy people at that meeting when this work was done, and about twenty of the members, and we didn't get a member out of the other fifty. There was a lawyer there. I didn't know he was a lawyer, I wish I had known it at the time, that helped very materially in calling that meeting at Kansas City. He made one of the most absurd statements about law that I ever heard. He was asked the question when the motion was put to call that meeting at Kansas City, if under the charter of the association they had a right to call that meeting. His answer was this: Our charter does not prevent it, therefore we have a right to do anything that our charter does not say we shall not do." That is exactly the opposite of the powers of the charter. The

law on charters is, and the reason you get a charter, is to permit you to do certain things. If he will read that charter he will see that that charter specifies everything that they have a right to do, and they haven't a right to do anything else, yet that lawyer got up there and told them they could call that meeting in Kansas City because the charter didn't prevent it, just the opposite of what should have been said. To my mind there was two or three commercial beekeepers there who wanted to put that through, and they put it over a good many people that voted for it, out of about fourteen that really voted for it in the first place, just because they didn't understand the situation.

One thing they wanted to do that I think is very damaging to the people at large in the United States as well as the beekeepers, and that is they want to standardize honey so that everybody in the United States and everybody in the world must eat exactly the same kind of honey, and that a mixture of the poor stuff and the good stuff together be made and standardized, that is what they want to do, that is what they advocated. I am talking about a gentleman, I remember one time one of our great orators had noticed many times in his life that people were named according to their specialties. He said the longest man he ever knew was named Short and the shortest man he ever knew was named Long; and this man who was there and put this proposition over, his name was Justice (laughter), he is a very smooth talker. He runs an organization in California and probably is getting five to eight thousand dollars a year for his services. He is well worth it, he can get it in any of these corporations I am satisfied from what I heard him talk; he is probably getting five thousand dollars a year for selling honey.

A MEMBER.—California honey?

MR. SMITH.—California honey. And he wants to control the honey of the United States. Now, he wants to standardize the honey, and he is afraid of the little beekeeper. In his remarks he said, "Get their name on the dotted line." Now, I don't believe that most of the people that voted for his proposition there understood just what it meant. He is the kind of man that could come into your home and make you believe he is going to make you rich on five colonies of bees if you do just as he told you, and if you would sign his contract to join his association. He says if you get their name on the dotted line in this association, and if they don't do what they agreed to do, sue them.

MR. BULL.—He didn't make that statement that plain.

MR. KING.—You couln't abuse that man in California like you could here. He is putting in ten or twelve or sixteen thousand dollars in the pockets of the people of California and you are making a statement about him that is not true.

MR. SMITH.—If I am mistaken I will stand corrected, and I apologize.

THE PRESIDENT.—Let the gentleman finish, then we will answer.

MR. SMITH.—Now, this gentleman made the remark that the courts of California were sustaining their contracts. That said to me his people are not satisfied. I don't want to belong to an association of beekeepers where the people have to be sued in order to hold them in the association. I asked him how many of their members they had to sue. He didn't answer. I believe he said he didn't exactly know, but he said they thought it was right if ninety per cent of them paid up that the other ten should pay and they would compel them to pay in the courts.

Now, I want to get to the point. Probably it should have been made when the motion was made that we join that association. We have no right, in my judgment, to send a representative to that meeting—we have no power to do it. We don't want to take our funds and pay some fellow's expenses to go out there, neither do we want to ask a man to give his time to go out there. I went to a man who deals in foods in Chicago, in the millions, and asked him what would it be worth to you to get full control of the Beekeepers' Association? He said fifty thousand dollars. The members of that National Beekeepers' Association have got something that they do not realize the value of. It is more valuable than they realize it is. There are several millionaires in Chicago who will pay fifty thousand dollars to get full control of that association, and they will make money on it. That is a commercial fact. Let me tell you what was actually done on the first vote on that Kansas City meeting at the LaSalle Hotel. Fourteen people voted for it. The secretary told me there was over two hundred members. You can't tell me that fourteen people have a right to rule in an association where two hundred members belong. It must take a majority unless their charter gives fourteen the right to rule. The highest vote they got after the first vote, the test vote, was about twenty or twenty-one votes, and two or three told me that they were not in favor of it, but then they wanted to be with the majority, they didn't want to appear to object. Now, our by-laws do not permit us—the laws of Illinois do not permit us to join an association by proxy, by representation, and that meeting at Kansas City has no more right to change the national association's charter or by-laws than any one of you and I have to get together in a back room and change it—not a particle. They are not going according to the by-laws and the charter, as I understand the by-laws and the charter, and anyway, the proper place to have done that was to have given notice last February and bring it up at the meeting of the Beekeepers' Association, the National Beekeepers' Association the coming year, in place of where they are going to meet.

Now, I object seriously to having so much of my time taken up last year with that organization and that meeting in Kansas City. It is simply a meeting called to see whether they are going to change

everything about the national association, and I have no objection to those commercial beekeepers having a national association if they want one. They ought to have brains enough and initiative enough to get together and organize for themselves, a national association without taking the money of the one that is already organized to do it with, or taking the talent from that one. The national organization is an organization fifty years old. It is incorporated. It is valuable to the members who have kept it up. Let them keep their charter and go on as they have for the past fifty years, doing the same work and the same kind of work. Professor Phillips said there that he had attended the National Association for seventeen years, and everywhere they had reorganized. Do you want any better answer as to why they are not more prosperous? None of us know what they are going to do.

MR. KINDIG.—I believe I can clarify this subject a little bit. One of the reasons for that Kansas City meeting is to avoid the taking up of people's valuable time at the convention at Buffalo by a long discussion of the pros and cons with a large number of people that can't get together. You all know a committee is more effective than a large body. Now, here is the situation as I understand it. To put the thing bluntly, there is no National Beekeepers' Association. As I understand it, the membership of the National Beekeepers' Association is made up of the affiliated associations of the several states, and there are no affiliated associations of the several states. For a couple of years past the national organization has existed only in name.

MR. SMITH.—Haven't they a charter?

MR. KINDIG.—They have a charter but there are no members. That is the point of the proposition. They have a charter, they are a corporation, but there are no members. That is the reason for the meeting at Kansas City, when you get right down to the facts of the proposition there isn't any national organization. The whole question as I see it here is, do you want one or don't you want one? That can be very easily answered, I think.

MR. SMITH.—Just one question I would like to ask. If the people who were taking in the money at the LaSalle Hotel from people who thought they were becoming members of the national association, knew there was no national organization, were they bunco steerers?

MR. KINDIG.—That same statement was made at the LaSalle Hotel, that was why the roll-call was taken of the names of the individuals belonging to the association, rather than a roll-call of delegates for the states. Any of you people who attended the last convention at Madison, Wisconsin, know business was done along the line of delegates from certain states and under the charter of the national association that is the only legal way to do business, but as there were no delegates and there were no members the only recourse left was to submit this plan to the vote of the people who had paid their membership fees. To get

right down to brass tacks there is no national and has not been since that meeting two years ago at Madison, Wisconsin. We are simply a sort of an organization existing; it is not a healthy condition, and it is not right. It has either got to be knocked in the head or we have got to have an organization, one of the two; that is why this proposition is brought up. As I correct on that, Mr. Smith? There is no national organization.

MR. SMITH.—Then why not put it in shape to organize a national association and get the thing started right.

MR. KINDIG.—I think the general sentiment of all these delegates is to organize a new national beekeepers' association. That is what it will be as far as that is concerned. Conditions are so it can't be otherwise. There will be a new national beekeepers' association. There isn't today.

THE PRESIDENT.—As I understand the proposition, it is not, Mr. Smith, to take the money of the old national association to form a new one. They are not asking for the money. They are trying to organize a new association, then if the members of the old association are willing to accept it they may do so, but we are not forcing anything on them at all.

MR. KINDIG.—This plan will all be submitted to the members of the Buffalo convention and they can either take it or leave it alone, either continue as we are, or reorganize.

THE PRESIDENT.—This plan will all be submitted to the members of the Buffalo convention and they can either take it or leave it alone, either continue as we are, or reorganize.

THE PRESIDENT.—I think practically all the beekeepers of the east will oppose Mr. Justice's proposition, and that is why I believe eastern beekeepers should be represented in this meeting, because we do not want the California beekeepers to put it over on us. We couldn't stand for what is proposed by Mr. Justice. His idea of compelling every beekeeper to sell all his honey through the association I don't believe would be accepted by the east.

MR. COLEMAN.—About suing members for not selling their honey through the association. That is a mistake, Mr. Justice never said that. There never was a suit as far as I know, in California, against a beekeeper for not selling his honey through the organization.

MR. SMITH.—Inasmuch as I have been disputed, I think I have a right as a matter of privilege to clarify the matter a little. Mr. Justice stated in answer to my question in the LaSalle Hotel as to how many of his members they sued, he said he didn't know just how many, he didn't have the number, but that "we feel that if ninety per cent paid we ought to sue the other ten and make them pay." I believe the chairman will remember that.

THE PRESIDENT.—I believe the eastern beekeepers will not sign a contract that will bind them to anything unreasonable. That is why I believe it important that eastern beekeepers be presented at this meeting to see that these things are brought up in the right manner, and the right provisions adopted. We do not want one section of the United States to dominate the national beekeepers' association, if we reorganize and form a new association. We do not want it dominated by one section; it should be representative of the whole United States, north, south, east and west, and in the coming together of many it is said there is wisdom. I believe we can organize a national association that will be worth while. We all recognize the fact that in the past it has not come up to our expectations. We want to reorganize and make an organization that will be of benefit to the beekeepers of the whole United States. Pardon me for speaking from the Chair.

MR. SCOTT.—As to what it has done, I am one of the older ones and know something about it. It has done more than anything else in the beekeeping world for beekeepers. It has fought lawsuits for me and won them. That has saved a lot of beekeepers a lot of trouble and it is worthy of respect, from that cause alone, from every beekeeper in the United States.

MR. WOOLDRIDGE.—Why do those people that threaten suit, why don't they want to sell their honey to the association? It is because they got a lower price than they could obtain somewhere else? Why don't they want to live up to their contract?

THE PRESIDENT.—I am not familiar with the situation, but as I understand it the price is set by the Association in California and some of these other people find that they can possibly sell it in other ways and make a little more money by doing so, and they therefore refuse to sell to the association. I may be wrong on that, but that was my impression. That is merely a local matter. We don't need to consider that when we consider a national association. What they do in their California Honey Producers' Exchange is nothing to us in the reorganization of the National. Is there further discussion? What shall be done about this?

MR. SCOTT.—Lay it on table till afternoon.

A MEMBER.—Finish it now.

THE PRESIDENT.—If it is the general opinion that we should leave it over till this afternon we will do that. It is now twenty-five minutes after eleven. Is there any other business that we might take up? Have you any questions or discussions you might take up at this time? This afternoon we have the appointment of committees and consideration of the appointment of the delegate to the Kansas City convention, and we have Miss Fowls with us from Medina, Ohio, representing the A. I. Root Company. We will be very pleased to hear her. I would like to have every member present this afternoon. I will ask that we

meet promptly at one-thirty, so that we may finish our work before it is too late, because some of us have a long ways to go.

A MEMBER.—Isn't there another question on this program before dinner?

THE PRESIDENT.—I think we discussed that yesterday. We will take up the remaining time in a discussion of the subject, How Can We Make Our Association More Helpful to its Members?

MR. SMITH.—If you will allow me to make a suggestion, Mr. Chairman?

THE PRESIDENT.—Yes.

MR. SMITH.—I suggest that a committee be appointed, consisting of one or more men, to take up subjects that will interest in a general way all beekeepers, and report at the next meeting. Give this committee of men that you appoint on certain subjects power to appoint a few himself, and let him get out and use that and get more members. There are five times as many beekeepers living in Chicago alone as there are here, and every one of them ought to be here. They could learn something that would be valuable to them, and many of them could give us something that would be valuable to us. I will just mention one item —queen bees. It is going to take the cooperation of two or three hundred people to improve the strain of bees properly. Every queen bee should be tested. No man has capital enough and patience enough and time enough to test them as they should be tested. They should be tested, the queen bee, for certain characteristics. She should be selected as a breeder, she should be placed in the hands of a good breeder and her daughters should be placed in the hands of two or three hundred beekeepers in the United States and reports made as to the results. In that way we can select good breeding queens and get results. Every other question that comes up in beekeeping has the same outlet. It is one of the biggest things that I have ever studied, and that is why I am in the business. I have been connected with large corporations, with large associations, and I got tired of them. I want some room where I can use my own original thoughts and be somewhat independent. I am making a living out of bees and I have not got fifty colonies.

THE PRESIDENT.—Any other suggestions along this line?

MR. ROEHRS.—The question has been up again and again: How can we get more beekeepers to join our association? Because we always find that we have at every meeting less than we had, maybe, at the meeting before, and it seems to me if we would talk less business, especially prices, and all that, and talk more bee lore, telling the beginners just how to do this and how to do that; then they would come and enjoy it and have the benefit of being a member and of being with us, but in general we don't speak much of how to go at the work and do it. Now, I am not speaking for myself. I have been working with bees for over thirty years, and I naturally know a little about them, but still

I am very thankful if somebody gets up and tells me how he is going to do this and that. If somebody tells me he got for his honey ten or fifteen cents a pound, that doesn't interest me, and I think that is just the trouble why we have such a hard time getting new members, because they are all new scholars; they want to learn, and if we talk about those things way up, they don't understand and don't catch on, so let us come down and be on level ground and talk to a man in a plain language, how to do a thing and why to do it (applause).

MR. KING.—I just wanted to inquire whether the secretary is allowed anything for his work. That has a bearing on our problem over in Michigan.

THE PRESIDENT.—The secretary is allowed a percentage, I believe.

THE SECRETARY.—Yes, twenty-five per cent.

MR. STEWART.—I move that he be allowed twenty-five dollars additional for this year's work.

A MEMBER.—Second the motion.

THE PRESIDENT.—All in favor of the motion signify it by saying aye, opposed no. The motion is carried.

MR. KANNENBERG.—What does the president get (laughter). He is the head man of the organization and I think he is entitled to as much as anybody else.

MR. STEWART.—He gets honor, that is enough for him.

MR. KANNENBERG.—I think honor don't count for much.

MR. STEWART.—It does to some people.

THE PRESIDENT.—I think the president is sufficiently paid in being permitted to come here. I believe the question that we had under discussion was the means of improving the Northwestern Beekeepers' Association. We want all the suggestions we can get along this line, because we want to make it better if we can.

MR. KINDIG.—Do you have any provisions in your constitution for looking after the rights of beekeepers legally, if necessary?

THE PRESIDENT.—I think not.

MR. KINDIG.—Now, within the last year over in Michigan we have taken up three cases where the rights of beekeepers were being trespassed upon by the city or by individuals, and in the name of the association we have gone ahead and fought those propositions through, in each case to the benefit of the beekeeper, and while none of these cases ever got to the point where it was necessary to have a court decision, there was one of them got as far as court and was settled there; the other two were city council propositions, where the city was going to kick two different fellows out in the country, because of their bees. I think one of the most valuable things in connection with an organization of this kind is a provision whereby if a man gets in trouble by virtue of his bees stinging somebody's horse or because the neighbors' children get stung and the neighbors say he has got to move out, that

this organization will be committed to the protection of the rights of that beekeeper. I don't mean by any means that they will be committed to defend him in the wrong, but they will be committed to the project of defending his rights. One of these men in the case I referred to, was in Lansing, and it was settled in this way: they were going to pass a city ordinance in Lansing; we went up and killed the thing, and it wasn't any more than dead till it came to life again, and that time they were going to pass one sure. The details were all investigated and it was actually found that the beekeeper was in wrong. He was actually a nuisance, pure and simple. He was keeping some thirty-five or forty colonies on the back end of a short lot, with neighbors all around him. That was actually a nuisance, because there were no barriers about him. We persuaded that man that nothing better could be done than move the bees out in the country. While it didn't do him a great deal of good, it protected the interests of every other beekeeper in the city of Lansing, because if the ordinance had gone through they would have to all go out—they would all have had to suffer the same thing. I believe if your organization will take the stand that it will, so far as it is financially able, come to the assistance of a beekeeper, that it would be one of the biggest drawing cards of this association. Of course, they don't expect to get into trouble, but they never know when they will get into trouble. I know this has been true in Michigan, and I know that is one of the things that made the national a big factor in beekeeping some twenty-five or more years ago.

THE SECRETARY.—May I speak? In the first place you must have some funds to start with. If we get a big enough membership, if we could get in a thousand or five hundred members with one dollar, we would have sufficient funds to take care of everything in that line as well as have a larger mailing list for sending out letters. At the present time we are operating on about eighty to ninety dollars a year, and we carry a little surplus in the treasury. Last year I think it was a little better, there was a gain of eleven dollars over the year before—eighty-eight members. But if we had eight hundred and eighty-eight we could do a good many things we can't do now, and if everybody would get out and drum up members it would help a lot. The letter we sent out in August brought in over forty members out of those eighty-eight. There were eight and ten members coming in a day, right along, for several days. If we can get a big enough membership list we can take care of these things—that is the whole thing in a nutshell.

MR. SMITH.—I move that a committee of three be appointed to take up this matter of protecting the members, as suggested by Mr. Kindig.

Motion carried and Messrs. Smith, Rettig and Sievert were appointed as members of the committee.

MR. KINDIG.—I feel as if I ought to offer another suggestion in connection with this, in regard to the cost. It has not cost our association a cent this year to look after those things. I don't know how you people are fixed up on extension workers here in your three states. There is an extension man, I believe, in Wisconsin. Is there not, Mr. Wilson,

THE PRESIDENT.—There is one in Indiana.

MR. KINDIG.—In Indiana there is Professor Baldwin. What there is in Illinois I do not know. We handled that proposition through the assistance of these extension men. For instance at Monroe I sent their extension man, Mr. Ewell, a copy of "A. B. C." and "X. Y. Z." in which there is laid out a very comprehensive survey of the court decisions on all these various cases. He went down there to the city attorney and laid it before him. He said, "Here is what the courts have done. Do you fellows want to go up against anything like that?" After he read that over any sensible city attorney who has had recited to him a string of decisions by the Supreme Court adverse to what he claims, any city attorney would advise the council not to pass an ordinance like that. There isn't any particular expense connected with a thing like that.

MR. BULL.—We want the money there for backing. That is what I had reference to. If you have got the backing you don't have to spend the money necessarily, but you need it there for the backing.

THE PRESIDENT.—Every county seat has a record of the court decisions, beekeeping as well as others, and attorneys have access to that.

THE SECRETARY.—Mr. President, might I say a few words? The reason why I asked that question is because it falls to my lot to get up this program and I want to make it of as much interest as possible. Any suggestions or help I can get on that program is for your benefit. I would like to hear from anyone who has any suggestions, any particular line of work or anything to be taken up here at the meeting; I would like to hear from the different ones, what they actually want done. I am at your service. I am working for you, not for myself, and I want to do what will please most of the members.

MR. GILL.—I have observed that some of the states around us have been taking some advance steps, whereas it seems to me Illinois has not. I think it is true that anything that we want, anything that the beekeepers need, that the demand must come from them, from the outside. We can't expect that our legislators will appropriate money or take steps for extension work or other things of that sort, unless they feel a demand for them, and I think that one of the biggest drawing cards for beekeepers is to get together and organize themselves in an association of this sort, to unite with it, which would be that very thing. If we are going to get larger appropriations for foul brood inspection and other things, we must be organized for it, organized strong enough so

that we can demand what we want, and be well enough organized to get what we demand. It seems to me some discussion along this line of what we want at the hands of the State, what we should demand, would be an excellent subject to bring up some time.

MR. BULL.—Mr. President, I have had in mind how it would be, as long as we represent about four states here—we do not get a chance to get around to the meetings, and do not get acquainted with the different talents in other states—how would a committee of three, one from every other state, to offer suggestions to the secretary in regard to getting out the program, how would it be to have a committee of that kind? For instance, from Wisconsin or Michigan they know what is going on there in up to date lines of beekeeping. I have no way of getting that information from these localities, and it could be brought to us. I wonder if a committee could be appointed that would be of assistance not only to me but to the association? We want to make this association big enough to fill a room about four times as large as this one, at our meetings.

MR. STEWART.—It was at one time.

MR. BULL.—Why can't we do it again?

MR. SOPHER.—Where is our inspector, why isn't he here?

MR. SMITH.—He knows there is no foul brood up here among us. (Laughter.)

MR. SMITH.—I have just thought of a little matter I think will be of interest. I know we ought to do it. I move we give Professor Kindig a rising vote of thanks for his able address here.

SEVERAL MEMBERS.—I will second that.

THE PRESIDENT.—Moved and seconded that we give Professor Kindig a rising vote of thanks. All who are in favor of this please rise. (Everybody arose.) I see it is unanimous.

MR. KINDIG.—Mr. Chairman, I certainly want to thank you people for this expression. I feel that I didn't have very much to offer you after all.

MR. STEWART.—What little there was was mighty good, though.

THE PRESIDENT.—We will now hear the report of the auditing committee.

CHAIRMAN AUDITING COMMITTEE.—We have gone over the books and find them perfectly correct, leaving a balance of $73.42 in the treasury. Mr. Bull's books are in very good shape and he is to be commended for the thorough way in which he has kept them. It is easy to audit them. Farther than that we are, I suppose, dismissed.

MR. SMITH.—I move that Mr. Bull the treasurer be authorized to pay Mr. Bull the secretary twenty-five dollars.

MR. STEWART.—Second the motion.

(Motion carried.)

(At this time Mr. Wooldridge explained the use of the hair felt, showing samples.)

WEDNESDAY AFTERNOON SESSION.

THE PRESIDENT.—I understand we have a gentleman with us who has bottles for honey. He would like to demonstrate these containers. Mr. Snoots, will you come forward, please?

MR. H. W. SNOOTS.—I have four different sizes of jars here, which I will be glad to explain to you. These samples of jars here, are like your secretary has been using. (To Mr. Bull) Will you explain it to them, you can do it better than I.

MR. BULL.—I have some samples of jars here like I have been using. I thought maybe some of you might be interested to see how clear it is, and how glass looks instead of tin for honey. There are two or three advantages in using glass that you do not get with tin; one is it makes a better looking package. You can show the people exactly what they are getting; it makes a better seller. It is a larger looking package, and if you use a two pound tin can it is about the same diameter as this glass; you set a tin can of two pounds up against this glass jar, and they will take the glass and pay you twenty-five cents more for it, each holding the same amount.

In the cities, especially, the person who buys the tin pail will not use it, they will throw it away, throw it in the garbage, and all, then if there is any disease in the honey it will be transmitted. The glass jars on the other hand will be saved and used again for other purposes. It is a big item. I have been using this size here, 5 pound, for the last four or five years. I wouldn't go back to tin under any circumstances. The glass is rust-proof. If people don't want them you can always have them returned and give a small allowance on them. Mr. Snoots is the representative of this jar, they are made at Zanesville, Ohio.

A MEMBER.—How much do the different sizes hold?

MR. SNOOTS.—The large one holds five pounds, this one holds two pounds. This large jar costs $16.50 a gross, making about eleven and a half cents apiece at the factory. Have you ever noticed that the Bunte Bros. Candy Company uses this container a good deal for candy? It is white glass. Those packages go all over the world.

MR. SMITH.—What is the name of the firm?

MR. SNOOTS.—It is the Kearns-Gorsuch Bottle Company.

A MEMBER.—What have been the previous prices?

MR. SNOOTS.—On the small, 2 pound, jar the price has been in crates, ten fifty a gross.

A MEMBER.—Do the rubber sealers come with them?

ANSWER.—Yes, sir, they are complete.

A MEMBER.—Have you the screw caps?

ANSWER.—Yes, but not in that shape.

MR. BULL.—The beauty of this jar is that it is the biggest sized jar for two pounds that you can get.

MR. SNOOTS.—A screw cap will not hold honey.

A MEMBER.—Do you carry a stock of these jars in Chicago?

MR. SNOOTS.—Only samples, that is all. Freight prepaid to Chicago when they are shipped in full cars.

THE PRESIDENT.—I would offer a suggestion in regard to putting honey in these jars. Those of you who retail them, if you put them in stores for sale it is a good thing to heat them after filling, to prevent granulation. If you set these bottles in water and heat to 150 degrees and allow to cool slowly, they will not granulate for a long time, sometimes for a year or more, but if you heat it and pour it into the bottles it will granulate in a very short time.

A MEMBER.—Put it in cold and heat it up in the bottles?

THE PRESIDENT.—Yes.

MR. BULL.—That is the same can that is used for the cold pack.

MR. SMITH.—Can you make any inducement to members of the Northwestern Beekeepers' Association?

MR. SNOOTS.—We sell one just as cheap as the other. That is the only inducement.

MR. SMITH.—What would you do if we clubbed together next year and took several gross of them?

ANSWER.—That is the lowest price I could make anybody.

THE PRESIDENT.—I believe Mr. Stewart has a motion to make, have you, Mr. Stewart?

MR. STEWART.—I might make one before I get through. We value things in proportion to the amount of money we have to pay for them usually. If I could get a suit of clothes for five dollars I wouldn't think much of it, but when I pay seventy-five dollars, then I begin to think it is worth something, and that is a good deal the way with bee meetings they have here—not very expensive, people don't care what it is. I think if we would raise the fees we would bring them in, and I make a motion that we raise the dues from one dollar to a dollar and a half. That takes in the Illinois association.

MR. BULL.—A dollar for this association and fifty cents for the State.

MR. SMITH.—You can't join one without joining the other, you can't join here for less than a dollar and a half here, and you get into the state at the same time.

MR. SMITH.—You have got to pay one dollar and a half now, to be in both organizations.

MR. STEWART.—A dollar and a half now, I want to make it two dollars. I make a motion to make it two dollars.

MR. SIMMONS.—I will second that motion and bring it up for discussion.

THE PRESIDENT.—It is moved and seconded that the rate be a dollar and a half, with fifty cents for the state association. That will include the book.

MR. HAAN.—I believe we ought to do a good deal like a well provided colony of bees. When they have plenty of stores in their box they feel a little better than if they had only a little. By providing a little more we will feel like branching out and doing things we wouldn't do otherwise. We also increased the secretary's salary a little bit this morning, so I think we ought to do something to put something back in the treasury, and I don't think two dollars would injure anybody very much in a year's time. I think if they are all conscientious and willing that the organization should prosper, they wouldn't object to paying two dollars for that. I think they could put in another colony of bees, that would pay more than two dollars dues in one year's time, and probably pay the dues for five years' time. I think, as Mr. Stewart says, if we only pay a little for it we only consider it of a little value. If we pay more for it we consider it a whole lot more valuable than we do if we only pay a little.

MR. KANNENBERGER.—Mr. President, that is all right enough, to raise the dues, but really it is a little too late now to do that because everybody knows it is a dollar and a half and the letter has been sent out to hundreds of people for a dollar and a half you can join this association. Of course if you want to raise it now you can only charge the two dollars for next year and not this year any more. That is the way I look at it.

MR. BULL.—Mr. President, I don't know about raising these dues. If we go out and double our membership that will be better than raising the dues—far better. Let each one of us take it upon ourselves to push this thing with our neighbors and then when you get a chance have some blanks with you and get them filled out. If we could get five hundred members it would be worth more than if we had fifty or seventy-five members and paid five dollars dues. We would have more money. It only takes me a few minutes longer to write those extra names on the book, that is all there is to it. I think we better leave the dues where they are and get out and drum up membership. I think we ought to get some of these secretaries in the states around us to drum up trade in the outside territories. I don't get around to the state meetings or I would drum up a little membership if I could.

MR. SMITH.—I think many of the dues are already paid for next year.

MR. BULL.—They are.

MR. SMITH.—Then we have contracts with those people, we have accepted their money. It would be impossible to raise the price on them.

MR. BULL.—The only way I could see to raise it would be to have it take effect January 1, 1921. As far as 1920 is concerned, inasmuch as we have already made contracts and accepted members we should leave it for this year at the same price.

MR. SMITH.—As I understand it, the motion is really out of order. We have a contract with most of our members already, and have accepted their money. They are already members and have paid their dues for next year, then a motion to raise the dues now would be out of order, but a motion to raise the dues and begin January, 1921, would be in order.

(The motion voted down.)

THE PRESIDENT.—I believe the question of arranging for a delegate to the Kansas City convention should be considered. Have you any motions or suggestions?

A MEMBER.—Is every state in the eastern states going to be represented there?

THE PRESIDENT.—They should be represented.

MR. SMITH.—Do we know whether any of they have already elected representatives?

MR. KINDIG.—Mr. Chairman, east of the Mississippi River, so far as my knowledge is, Michigan and New York are the only ones that have representatives elected.

MR. SMITH.—Was it a state organization or an organization of lay workers?

MR. KINDIG.—They are state organizations, in fact the one from New York is a western New York organization. New York is divided into two or three organizations, as I understand it, and it is the Western New York Beekeepers sending Professor Ray, of Cornell University, as their delegate. He is also acting as a delegate for the Rhode Island organization, who want to send a man but said it was impossible to contribute anything toward his expenses. It is a long way from Rhode Island, and they prevailed upon Professor Ray to represent them. Michigan elected a representative the other day. I haven't heard from a number of other states; Iowa, Nebraska, Misouri and Kansas have elected delegates, Texas will send two delegates and the cooperative states of the west will send a solid delegation. That is why I plead with you people this morning to send a delegate. The interests of the east must also be represented or it will not be a representative meeting. I feel sure that Indiana will send a delegate; it is likely that there will be one from Ohio, but I am not so sure. Also several other states are seriously considering the matter, but I have not heard from them. I received a letter from Mr. Kildow in Illinois, stating that he thought it

likely that Illinois would send a delegate. They had a convention the other day. I have been away from home and I haven't heard what they did do.

A MEMBER.—They elected Doctor Baxter as a delegate.

MR. SMITH.—Mr. President, inasmuch as we are, as you know, members of the State association, and Doctor Baxter represents the State, why not leave it rest at that, or let him represent us? I wouldn't be in favor of appropriating any money to defray the expenses of anybody to represent this association out there, because I don't believe they will do us any good. If they are dominated by the western people, they certainly won't do us any good.

THE PRESIDENT.—There is no motion before us, it is simply a suggestion that has been offered. Is there a motion in regard to this?

MR. HAAN.—Mr. President, can it be fixed up between this organization and the State organization in regard to having one delegate to represent the two organizations? I don't know whether it could or couldn't. As Mr. Smith said a little while ago, I believe it wouldn't be any more than a courtesy for us to ask they to place us on their list as having Doctor Baxter represent us as well as the State organization.

THE PRESIDENT.—You would have one vote then for two organizations.

MR. HAAN.—The vote would possibly count a little more on account of the two organizations, but he wouldn't have any more votes if we didn't give him that consent, but I think it would create a better feeling. If we can't send anybody there let us delegate the business to Doctor Baxter.

THE SECRETARY.—Why not elect Doctor Baxter as a delegate?

MR. HAAN.—From this organization?

THE SECRETARY.—From this organization.

MR. HAAN.—We might do that. That would probably cover my point as well as anything else.

A MEMBER.—Is he a member of this association?

THE PRESIDENT.—I don't think he is.

MR. KINDIG.—May I say another word in this connection? I was in pretty close touch with what that committee was doing last year, and I know that you have a man here in this organization that kept the interests of the west from running away with the convention last year. Now, my personal feeling is that that man ought to be at this Kansas City meeting. It was his influence, largely, that tempered, if you could call it tempered, the various resolutions indorsed at the National last year, and I feel that if there is any possibility of your sending that man there, that he will have a very, very wholesome influence on the findings of that committee, because he is a beekeeper for a living and he has a broad view of what beekeeping means, and it seems to me that there is

no on in this State or in Indiana that could more thoroughly represent the beekeepers than your chairman, Mr. Miller. (Applause.)

MR. STEWART.—Where would the money come to pay those expenses?

MR. KINDIG.—I don't know, maybe he has it. (Laughter.)

MR. SMITH.—Under the circumstances, if Mr. Miller will tender his services and pay his own expenses I will be glad to vote for him to go out there.

THE PRESIDENT.—I don't know whether I could do that or not.

MR. SMITH.—I don't believe a vote in that meeting out there is worth anything in particular to this association. I believe that the National Association will go right on just as it has, in spite of the meeting in Kansas City. It can't affect that National Association very much, they will meet and elect their officers, their president and other officers, and go right on just as they have been in the past. They have reorganized everywhere, but still they have gone right on and they will do the same thing again. They may organize a new association out there, but even then I do not believe we have, under our by-laws, any authority to join in the association as an association and send a representative. I don't believe we have. For that reason I don't think we have any right to take our funds to do it. We haven't the funds anyway. We haven't enough money in our treasury to pay carfare out there and back, besides the expenses there would be otherwise, twenty-five or thirty dollars. I move, Mr. Chairman, that whoever is elected delegate, that he go at his own expense.

THE PRESIDENT.—It seems to me, in order to make a success of any organization it is necessary for beekeepers to pull together. There is more to be obtained by boosting than by knocking. We can't make a success of anything by prophesying a failure. This can be made a success if it is pushed in the right spirit, in the right manner, but if we all prophesy failure and say it can't be done and knock what every other fellow does, of course it will fail. I am not anxious to go, I would much prefer somebody else would be appointed. I would like to see the Kansas City meeting made a success, but if it is the sense of this organization that no delegate be sent, of course we will abide by it. There has been a motion before us, I believe there is no second.

MR. KANNENBERG.—I second Mr. Smith's motion that we elect our president as a delegate to the national.

MR. STEWART.—He didn't make that kind of motion.

THE PRESIDENT.—The motion as I understand it is whoever is elected be required to pay his own expenses.

MR. KANNENBERG.—No, I wouldn't stand for that for one minute. I think this organization ought to be ashamed of itself to send a delegate there to represent it, to take care of its interests and not want to give him even his expenses. I believe if we send a man down there let

us send him down there right or not at all. That is the only way to do it. As the case has been stated this morning here, and this afternoon, I do not quite understand it thoroughly myself, but it seems it is necessary to send somebody there to represent the beekeepers of this part of the country, and if we are going to send anybody let us send him there right or not send him at all.

MR. SMITH.—He says send a man down there to represent our interests. We have no interests there any more than we have in New York or Florida or any other state. We are not a bit more interested in Kansas City than we are in other places. Why should we spend our money for this organization? If those people want to meet and form an organization all right, but we can't run our own little organization and make a success of it, and before we undertake to run a national organization and make a success of it let us make a success of our own, not spend all our money to send a man out to Kansas City to make a success in some other organization.

MR. RETTIG.—While I feel myself that all organizations will be a help to the beekeeper, if this organization isn't able to furnish any money to help finance this trip, let us take up a collection from the beekeepers, and I will head the list with ten dollars.

THE PRESIDENT.—I believe the motion was not seconded. It is lost for want of a second. What is the further pleasure of the meeting?

MR. KANNENBERG.—Why not take our representative from the state association and instruct him to represent us in the national, Dr. Baxter? Let us not drop it altogether. I make a motion that we write Dr. Baxter and inform him that our association elected him as a representative to represent us at the national.

THE PRESIDENT.—Is there a second?

MR. HAAN.—I second that.

MR. SPATCH.—I take it that this Northwestern Beekeepers' Association is for the benefit of whoever is concerned, and I think it would be up to the members to send a delegate to this national convention. It looks to me as though, if they are holding a national convention of that kind and we have no representative there, we are not doing what we should do. If we are going to go out after anything, let us all stand together. What is the use of one pulling one way and another one pulling the other. Let us pull together. I think we should have a representative down there, and I don't see why the members couldn't get together and send a good, capable man down there to represent us. Why should we have someone else cater for us down there? It is up to us and our organization, and I think it would be policy from what I can understand to send a repreventative of this organization down there, and I would be willing myself to donate toward a collection to defray the expenses of a representative. I think it would be a good

idea to put a motion before us to take up a collection to defray the expenses of a representative of this organization.

THE PRESIDENT.—The motion before us I believe is to ask our secretary to write to Dr. Baxter to see if he will accept the responsibility of representing this association at the meeting at Kansas City. Are you ready for the question?

(The question was called for.)

Those in favor will signify by saying aye, opposed no. I will ask for a standing vote; those in favor will please rise. The motion is lost. Is it the desire of this meeting to send a representative to the meeting at Kansas City?

MR. FLOOD.—Mr. President, I move our president be elected a delegate to the convention at Kansas City.

A MEMBER.—Second the motion.

MR. FLOOD.—All those in favor of our chairman, Mr. Miller, acting as a delegate to the convention at Kansas City and his expenses being arranged for by the convention will make it known by saying aye. The motion is unanimously carried.

THE PRELIDENT.—We have with us today a representative from the A. I. Root Company. I know you will all be very pleased to hear from her—Miss Iona Fowls, of Medina, Ohio.

MISS FOWLS.—Mr. Chairman, ladies and gentlemen: Honey practically sells itself these days. It needs only to be displayed and it straightway attracts the attention of the sweet-craving public, and because many of the people have fallen into the habit of spending freely, the honey sells readily and with no special effort on the part of the beekeeper. Besides this it is evident that there may be a shortage of colonies next spring due to winter loss. Also it is claimed that the per capita consumption of sugar has been increasing so rapidly that in spite of the certain increase in cane and beet sugar production it will for several years be impossible for production to increase as rapidly as consumption. All of these conditions pointing toward a good market in the immediate future, help us to forget the marketing problems of the past and to overlook the certainty that they will again recur in the future.

The present bright outlook is bound to attract others to beekeeping. And many of those now in the business will materially increase their output,—in fact they are already doing so, many having doubled or tripled their production within the last year or two. Now we do not really fear an overproduction of the amount of honey that could be consumed if the public fully realized its value. But suppose that demand does not keep up with supply; suppose that production continues to increase rapidly, then a bumper honey crop is raised throughout the country and at the same time, perhaps, consumers are found with less

ready cash than at present? Just about that time we would suddenly waken up to the fact that our present tactics in marketing would not do, and that even in time of prosperity we should all have been doing our best to increase demand and to use more business-like methods in the disposal of our crop.

Beekeepers in rather inaccessible parts of the country often find it necessary to sell at wholesale. Others even in more thickly settled districts sell in the same way, feeling that they cannot afford to compete with big bottling concerns in the disposal of their crop. They point out that this is an age of specialization. They say they are experts in raising honey, not in marketing. If such a beekeeper takes the trouble to become as well posted as possible before making the sale, he may get a fair price and be relieved from further worry during the rest of the year. At the present time this works out nicely but the year will come when the market will be weak and he will then be left high and dry with his honey or else compelled to sell below its real value.

Those who retail at least a part of their crop in their own and neighboring towns have the advantage that every pound thus sold advertises the entire crop, present and future; for there is no better add than a fine grade of honey put out under the producer's name. Selling in this way leads one to raise the very best grade possible and many beekeepers find a distinct pleasure in retailing honey which they themselves have produced. Their pride and pleasure in the selling gives them a cheerful optimism that is in itself an inducement to buy. If the trade is followed up closely and the customers kept always supplied, one may in a very short time double the amount of honey consumed in a given locality. In many places where one ton of honey was consumed annually a few years ago, as much as ten tons is now required to supply the trade.

Systematic advertising in the local newspapers exhibits at county fairs, an occasional address or demonstration in the schools and fine window displays, all help to increase the demand. Perhaps the last is as satisfactory a way of advertising as any. A very attractive display may be made by placing mirrors at the back of the windows, thus causing multiple reflections, and in front of the mirrors tiering the jars of honey in the form of pyramids with sheets of clear glass just the right size between the tiers. The sheets of glass make it possible to leave equal spaces between jars so that by a judicious use of lights a beautiful effect may be obtained. It also adds to the interest to place in the window an observatory hive of bees so that the passersby may watch the bees, as they suppose, "making honey." The novelty of seeing live bees always attracts the public.

For the beekeeper who has the time and inclination, there is no doubt that it will pay him well in dollars as well as satisfaction to retail at least a part of his crop in his locality, and if he raises a good

article, he will be helping not only himself but also all other beekeepers.

There are a number of factors that are at present preventing the best marketing conditions. In some cases the beekeepers do not use good business methods, but accept prices far below what they consider the true value of the honey. Others sell to the grocers and then canvass from house to house selling at a price lower than the grocer can afford to meet. A few beekeepers have been foolish enough after disposing of their honey, to buy an inferior grade thinking to keep their trade, which of course they lose.

Besides a lack of business methods some have shown that distressing state of mind of being "perfectly satisfied" with present conditions. It is a fortunate thing that this feeling is not general, otherwise there would be little chance for improvement in the future. Some of us are far from satisfied with present conditions. In some localities the beekeeper with a good article is unable to sell until the market has been cleared of all the half-price honey rushed in by the small beekeepers in the vicinity. We have also heard of honey sold in the same package in which it was purchased, yet sold at an increase of 100 per cent. The selling price was only fair, so it is evident the producer received altogether too small an amount to pay him for the time and labor expended. There are also reports of buyers paying different prices for the same grade of honey, in the same vicinity and on the same day. Such conditions call for, nt satisfaction but decided objection followed by united action of the beekeepers.

Some have felt no special attention necessary in the disposal of the honey crop since they believe the law of supply and demand will automatically take care of the matter of marketing. A few years ago a large firm began spending hundreds of thousands of dollars advertising honey. Demand responded by shooting ahead of anything dreamed of. This firm did not sit idly waiting demand but went out and made it. Today all beekeepers are profiting by it.

We beekeepers working individually can increase demand and improve marketing conditions, but think what a tremendous force we would be working along this line collectively. Some day we are going to do it. I do not know whether it will be through the National Association or how it will be done, but some day in the not too distant future the beekeepers of this country are going to work together for the individual and common good, just as the orange growers, raisin producers and others have done. Are we going to do this now under present prosperous conditions or are we going to wait till more adverse conditions force the matter on to our attention? If we are foresighted enough to look past the present and see the time when honey will sell less readily than now, we shall not only see the necessity of working up a larger, more dependable trade individually, but also shall realize the

imperative need of immediate and concerted action of beekeepers as a whole. (Applause.)

THE PRESIDENT.—Since there are quite a number of people who would like to get away early, perhaps we would better not have a recess but finish up our work as soon as possible. Last year or the year before a motion was made to revise the stenographer's report. Shall we have that this year? We didn't get to revise it very much last year, the report was not sent to us. Is it the sense of this meeting that this report shall be edited and the worthless part stricken out before it is printed, or shall it all go to print just as it is taken down? A motion is in order.

MR. RETTIG.—Mr. President I move that the reports be revised and the immaterial parts stricken out; also I will include Mr. Bull in that, to revise the report.

A MEMBER.—Second the motion.

THE PRESIDENT.—Moved and seconded that the report be revised by the secretary. Are you ready for the question? All in favor signify it by saying aye. (The ayes were unanimous.) Motion carried.

Another motion which is ordinarily passed here is to join as a body the Illinois State Beekeepers' Association. What has been done in this respect? Have you a motion?

THE SECRETARY.—I move we join the state in a body.

A MEMBER.—Second the motion.

THE PRESIDENT.—It is moved and seconded that the Chicago Northwestern Beekeepers' Association join the Illinois State Association in a body. Any discussion?

MR. SMITH.—Just a word, Mr. Chairman. I understand that when we join in a body we pay fifty cents apiece. I also understand and know when we join individually we pay a quarter. Last year I joined the state association, they charged me a quarter and charged me seventy-five cents for Gleanings for a year. In other words, if he joins through Gleanings he gets in for a quarter , but if he joins through the association it costs him fifty cents.

THE SECRETARY.—I believe they have raised their dues now.

MR. SMITH.—I wanted to ask what they had done about that at this last meeting.

THE SECRETARY.—I understand they raised the dues.

THE PRESIDENT.—Any further discussion? Those in favor of joining the Illinois State Association in a body please say aye, opposed no. The motion is carried.

We have some committee reports. We have a committee of which Mr. Smith is chairman, in regard to legal rights. We will hear from this committee.

MR. SMITH.—Mr. Chairman, we have not had time to prepare a written report, but we recommend that a judicial committee of five be

appointed by the president to secure legal assistance if possible from some attorney to take care of the legal matters that come up among the members. It is the opinion of this committee that there are plenty of young attorneys just beginning to practice in Chicago, that will be glad to render this service. The attorneys have an ethical understanding among themselves that they are not allowed to advertise, and all of them, at the beginning of their careers, advertise in this way. A bright young man who has just been admitted to the bar would donate his services to organizations in order to get acquainted with the people, and he usually puts that on his business card, that he is attorney for certain organizations. It is the opinion of the committee that an attorney can be secured, without remuneration, to take care of the legal end of this business, and with an attorney taking up any legal matter, just as Professor Kindig said, if an attorney will take up a matter and present the legal aspects of the case we can get along without lawsuits. We do not want any lawsuits and it is our idea to get along without them, therefore we recommend that that attorney be appointed.

THE PRESIDENT.—You have heard the report of the committee, that a standing committee of five be appointed to secure legal aid for the association. What shall be done with the report of the committee?

MR. SMITH.—I move its adoption.

A MEMBER.—Second the motion.

THE PRESIDENT.—It is moved and seconded that a committee of five be appointed to look after the legal affairs and secure legal aid for the association.

MR. HAAN.—I don't know whether a committee of five would do as much as one alone, that if any member of this organization got into trouble on account of his bees at any time or anywhere, he can write to the secretary and then leave it to the secretary if the secretary should give the circumstances to the attorney for him to investigate the thing. I think that would be a quicker way of getting around it than having a committee of five, which is rather cumbersome in my estimation. It is hard to get them together and decide on something. I think if the power was vested in the secretary we would get much quicker results than the other way. I am not against this proposition, however, on that account, but I would rather see it pushed through in some shape or some way; I think a committee of five would be too many.

THE CHAIRMAN.—Do you offer that as an amendment?

MR. HAAN.—Yes, if I can get a second to it.

THE PRESIDENT.—Is there a second to the amendment?

MR. KANNENBERG.—Yes, I second it.

THE PRESIDENT.—It has been moved and seconded that the secretary act in this capacity instead of this committee of five, as in the original motion. The question now is upon the amendment. All in favor of the amendment signify it by saying aye, opposed no. The

amendment carries. The question now stands as the original motion amended: shall the secretary act to secure legal advice for the association. Ahe motion carried.

Upon motion of Mr. Haan, seconded by Mr. Kannenberg, it was voted to continue the fair price committee.

The following officers were elected for the ensuing year:

President—E. S. Miller, Valparaiso, Ind.

Vice-President—C. O. Smith. Chicago, Ill.

Secretary—John C. Bull, Valparaiso, Ind.

Whereupon the meeting was adjourned.

FORMATION OF THE ILLINOIS STATE BEEKEEPERS ASSOCIATION.

SPRINGFIELD, ILL., *February 26, 1891.*

The Capitol Beekeepers' Association was called to order by President P. J. England.

Previous notice having been given that an effort would be made to form a State association, and there being present beekeepers from different parts of the State, by motion, a recess was taken in order to form such an association.

P. J. England was chosen temporary chairman and C. E. Yocum temporary secretary. On motion, the Chair appointed Thos. G. Newman, C. P. Dadant and Hon. J. M. Hambaugh a Committee on Constitution.

Col. Chas. F. Mills addressed the meeting on the needs of a State association and stated that it was his opinion that the beekeepers should have a liberal appropriation for a State Apiarian Exhibit at the World's Columbian Exposition.

A motion to adjourn till 1:30 p. m. prevailed.

AFTERNOON SESSION.

The Committee on Constitution reported a form for same which, on motion, was read by the Secretary, by sections serially.

Geo. F. Robbins moved to substitute the word "shall" for "may" in the last clause of Section 1, Article III. This led to a very animated discussion, and the motion was lost.

J. A. Stone moved to amend the above-named section by striking out the word "ladies" and all that followed of the same section, which motion led to further discussion, and motion finally prevailed.

Section 2, Article II, relating to a quorum, was, on motion, entirely stricken out.

Mr. Robbins moved to amend Article V by adding the words "Thirty days' notice having been given to each member." Prevailed.

Thos. G. Newman moved to adopt the Constitution, so amended, as a whole. Which motion prevailed.

See Constitution.

J. A. Stone moved that the Chair appoint a Nominating Committee of three on permanent organization. Prevailed.

Chair appointed as such committee, Col. Chas. F. Mills, Hon. J. M. Hambaugh, and C. P. Dadant.

Committee retired and in a few minutes returned, submitting the following named persons as candidates for their respective offices:

For President—P. J. England, Fancy Prairie.

For Vice Presidents—Mrs. L. Harrison, Peoria; C. P. Dadant, Hamilton; W. T. F. Petty, Pittsfield; Hon. J. M. Hambaugh, Spring; Dr. C. C. Miller, Marengo.

Secretary—Jas. A. Stone, Bradfordton.

Treasurer—A. N. Draper, Upper Alton.

Mr. Black moved the adoption of the report of the Committee on Nominations. The motion prevailed, and the officers as named by the committee were declared elected for the ensuing year.

Hon. J. M. Hambaugh moved that Mr. Thos. G. Newman, editor American Bee Journal, of Chicago, be made the first honorary member of the association. Prevailed.

At this point Col. Chas. F. Mills said:

"Mr. Chairman, I want to be the first one to pay my dollar for membership," at the same time suiting his action to his words, and others followed his example, as follows:

CHARTER MEMBERS.

Col. Chas. F. Mills, Springfield.
Hon. J. M. Hambaugh, Spring.
Hon. J. S. Lyman, Farmingdale.
C. P. Dadant, Hamilton.
Chas. Dadant, Hamilton.
A. N. Draper, Upper Alton.
S. N. Black, Clayton.
Aaron Coppin, Wenona.
Geo. F. Robbins, Mechanicsburg.
J. W. Yocum, Williamsville.
Thos. S. Wallace, Clayton.
A. J. England, Fancy Prairie.
P. J. England, Fancy Prairie.
C. E. Yocom, Sherman.
Jas. A. Stone, Bradfordton.

FIRST HONORARY MEMBER.

Thos. G. Newman, editor American Bee Journal, Chicago.

STATE OF ILLINOIS—DEPARTMENT OF STATE.

ISAAC N. PEARSON, *Secretary of State.*

To all to whom these Presents shall come—GREETING:

Whereas, A certificate duly signed and acknowledged having been filed in the office of the Secretary of State on the 27th day of February, A. D. 1891, for the organization of the Illinois State Beekeepers' Association, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereunto attached.

Now, Therefore, I, Isaac N. Pearson, Secretary of State, of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said, The Illinois State Beekeepers' Association, is a legally organized corporation under the laws of the State.

In Testimony Whereof, I hereunto set my hand and cause to be affixed the great seal of State.

Done at the city of Springfield, this 27th day of February, in the year of our Lord one thousand eight hundred and ninety-one, and the Inde-
[Seal] pendence of the United States the one hundred and fifteenth.

I. N. PEARSON, *Secretary of State.*

STATE OF ILLINOIS, }
County of Sangamon, } ss.

To Isaac N. Pearson, Secretary of State:

We, the undersigned, Perry J. England, Jas. A. Stone and Albert N. Draper, citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and for the purposes of such organizations, we hereby state as follows, to-wit:

1. The name of such corporation is, The Illinois State Beekeepers' Association.

2. The object for which it is formed is to promote the general interests of the pursuit of bee-culture.

3. The management of the aforesaid Association shall be vested in a board of three Directors, who are to be elected annually.

4. The following persons are hereby selected as the Directors, to control and manage said corporation for the first year of its corporate existence, viz: Perry J. England, Jas. A. Stone, and Albert N. Draper.

5. The location is in Springfield, in the county of Sangamon, State of Illinois.

(Signed) PERRY J. ENGLAND.
JAS. A. STONE.
ALBERT N. DRAPER.

STATE OF ILLINOIS, }
Sangamon County. } ss.

I. S. Mendenhall, a notary public in and for the county and State aforesaid, do hereby certify that on this 26th day of February, A. D. 1891, personally appeared before me, Perry J. England, James A. Stone and Albert N. Draper, to me personally known to be the same persons who executed the

foregoing certificate, and severally acknowledged that they had executed the same for the purposes therein set forth.

In witness whereof, I have hereunto set my hand and seal the day and year above written.

[Seal] S. MENDENHALL, *Notary Public.*

CONSTITUTION AND BY-LAWS OF THE ILLINOIS STATE BEEKEEPERS' ASSOCIATION.

Constitution.

Adopted Feb. 26, 1891.

ARTICLE I.—NAME.

This organization shall be known as The Illinois State Beekeepers' Association, and its principal place of business shall be at Springfield, Ill.

ARTICLE II.—OBJECT.

Its object shall be to promote the general interests of the pursuit of bee-culture.

ARTICLE III.—MEMBERSHIP.

Section 1. Any person interested in apiculture may become a member upon the payment to the Secretary of an annual fee of one dollar and fifty cents ($1.50). (Amendment adopted at annual meeting, December, 1919): And any affiliating association, as a body, may become members on the payment of an aggregate fee of fifty cents (50c) per member, as amended November, 1910.

Sec. 2. Any persons may become honorary members by receiving a majority vote at any regular meeting.

ARTICLE IV.—OFFICERS.

Section 1. The officers of this association shall be, President, Vice President, Secretary and Treasurer. Their terms of office shall be for one year, or until their successors are elected and qualified.

Sec. 2. The President, Secretary and Treasurer shall constitute the Executive Committee.

Sec. 3. Vacancies in office—by death, resignation and otherwise—shall be filled by the Executive Committee until the next annual meeting.

ARTICLE V.—AMENDMENTS.

This Constitution shall be amended at any annual meeting by a two-thirds vote of all the members present—thirty days' notice having been given to each member of the association.

By-Laws.

ARTICLE I.

The officers of the association shall be elected by ballot and by a majority vote.

ARTICLE II.

It shall be the duty of the President to call and preserve order at all meetings of this association; to call for all reports of officers and committees; to put to vote all motions regularly seconded; to count the vote at all

elections, and declare the results; to decide upon all questions of order, and to deliver an address at each annual meeting.

ARTICLE III.

The Vice Presidents shall be numbered, respectively, First, Second, Third, Fourth and Fifth, and it shall be the duty of one of them, in his respective order, to preside in the absence of the President.

ARTICLE IV.

Section 1. It shall be the duty of the Secretary to report all proceedings of the association, and to record the same, when approved, in the Secretary's book; to conduct all correspondence of the association, and to file and preserve all papers belonging to the same; to receive the annual dues and pay them over to the Treasurer, taking his receipt for the same; to take and record the name and address of every member of the association; to cause the Constitution and By-laws to be printed in appropriate form and in such quantities as may be directed by the Executive Committee from time to time, and see that each member is provided with a copy thereof; to make out and publish annually, as far as practicable, statistical table showing the number of colonies owned in the spring and fall, and the amount of honey and wax produced by each member, together with such other information as may be deemed important, or be directed by the Executive Committee; and to give notice of all meetings of the association in the leading papers of the State, and in the bee journals at least four weeks prior to the time of such meeting.

Sec. 2. The Secretary shall be allowed a reasonable compensation for his services, and to appoint an assistant Secretary if deemed necessary.

ARTICLE V.

It shall be the duty of the Treasurer to take charge of all funds of the association, and to pay them out upon the order of the Executive Committee, taking a receipt for the same; and to render a report of all receipts and expenditures at each annual meeting.

ARTICLE VI.

It shall be the duty of the Executive Committee to select subjects for discussion and appoint members to deliver addresses or read essays, and to transact all interim business.

ARTICLE VII.

The meeting of the association shall be, as far as practicable, governed by the following order of business:

Call to order.
Reading minutes of last meeting.
President's address.
Secretary's report.
Treasurer's report.
Reports of committees.
Unfinished business.
Reception of members and collection.
Miscellaneous business.
Election and installation of officers.
Discussion.
Adjournment.

ARTICLE VIII.

These By-Laws may be amended by a two-thirds vote of all the members present at any annual meeting.

C. E. YOCOM.
AARON COPPIN.
GEO. F. ROBBINS.

Following is a copy of the law passed by the Illinois Legislature May 19, and signed by the Governor June 7, 1911, to take effect July 1, 1911:

STATE FOUL BROOD LAW.

State Inspector of Apiaries.

Preamble.

§ 1. State Inspector of Apiaries—appointment — term — assistants —per diem.

§ 2. Foul Brood, etc.—what declared nuisances—inspection—notice to owner or occupant—treatment—abatement of nuisance—appeal.

§ 3. Annual Report.

§ 4. Penalties.

House Bill No. 670.

(Approved June 7, 1911.)

AN ACT *to prevent the introduction and spread in Illinois of foul brood among bees, providing for the appointment of a State Inspector of Apiaries and prescribing his powers and duties.*

Whereas, the disease known as foul brood exists to a very considerable extent in various portions of this State, which, if left to itself, will soon exterminate the honey bees; and

Whereas, the work done by an individual beekeeper or by a State inspector is useless so long as the official is not given authority to inspect and, if need be, to destroy the disease when found; and

Whereas, there is a great loss to the beekeepers and fruit growers of the State each year by the devastating ravages of foul brood;

Section 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That the Governor shall appoint a State Inspector of Apiaries, who shall hold his office for the term of two years, and until his successor is appointed and qualified, and who may appoint one or more assistants, as needed, to carry on the inspection under his supervision. The Inspector of Apiaries shall receive for each day actually and necessarily spent in the performance of his duties the sum of four dollars to be paid upon bills of particulars certified to as correct by the said State Inspector of Apiaries, and approved by the Governor.

Sec. 2. It shall be the duty of every person maintaining or keeping any colony or colonies of bees to keep the same free from the disease known as foul brood and from every contagious and infectious disease among bees. All beehives, beefixtures or appurtenances where foul brood or other contagious or infectious diseases among bees exists, are hereby declared to be nuisances to be abated as hereinafter prescribed. If the inspector of apiaries shall have reason to believe that any apiary is infected by foul brood or other contagious disease, he shall have power to inspect, or cause to be inspected, from time to time, such apiary, and for the purpose of such inspection he, or his assistants, are authorized during reasonable business hours to enter into or upon any farm or premises, or other building or place used for the purpose of progagating or nurturing bees. If said inspector of apiaries, or his assistants, shall find by inspection that any person, firm or corporation is

maintaining a nuisance as described in this section, he shall notify in writing the owner or occupant of the premises containing the nuisance so disclosed of the fact that such nuisance exists. He shall include in such notice a statement of the conditions constituting such nuisance, and order that the same be abated within a specified time and a direction, written or printed, pointing out the methods which shall be taken to abate the same. Such notice and order may be served personally or by depositing the same in the post office properly stamped, addressed to the owner or occupant of the land or premises upon which such nuisance exists, and the direction for treatment may consist of a printed circular, bulletin or report of the Inspector of Apiaries, or an extract from same.

If the person so notified shall refuse or fail to abate said nuisance in the manner and in the time prescribed in said notice, the Inspector of Apiaries may cause such nuisance to be abated, and he shall certify to the owner or person in charge of the premises the cost of the abatement and if not paid to him within sixty days thereafter the same may be recovered, together with the costs of action, before any court in the State having competent jurisdiction.

In case notice and order served as aforesaid shall direct that any bees, hives, beefixtures or appurtenances shall be destroyed and the owner of such bees, hives, beefixtures or appurtenances shall consider himself aggrieved by said order, he shall have the privilege of appealing within three days of the receipt of the notice to the County Court of the county in which such property is situated. The appeal shall be made in like manner as appeals are taken to the County Court from judgments of justices of the peace. Written notice of said appeal served by mail upon the Inspector of Apiaries shall operate to stay all proceedings until the dicision of the County Court, which may, after investigating the matter, reverse, modify or affirm the order of the Inspector of Apiaries. Such decision shall then become the order of the Inspector of Apiaries, who shall serve the same as hereinbefore set forth and shall fix a time within which such decision must be carried out.

Sec. 3. The Inspector of Apiaries shall, on or before the second Monday in December of each calendar year, make a report to the Governor and also to the Illinois State Beekeepers' Association, stating the number of apiaries visited, the number of those diseased and treated, the number of colonies of bees destroyed and the expense incurred in the performance of his duties.

Sec. 4. Any owner of a diseased apiary or appliances taken therefrom, who shall sell, barter or give away any such apiary, appliance, queens or bees from such apiary, expose other bees to the danger of contracting such disease, or refuse to allow the Inspector of Apiaries to inspect such apiary, or appliances, shall be fined not less than $50 nor more than $100.

Approved June 7, 1911.

(Bill passed in the 50th General Assembly.)

BEEKEEPERS' ASSOCIATION.

THE ORIGINAL BILL.

§ 1. Appropriates $1,000 per annum—proviso.
§ 2. How drawn.
§ 3. Annual Report.

AN ACT *making an appropriation for the Illinois State Beekeepers' Association.*

Whereas, The members of the Illinois State Beekeepers' Association have for years given much time and labor without compensation in the endeavor to promote the interests of the beekeepers of the State; and,

Whereas, The importance of the industry to the farmers and fruit-growers of the State warrants the expenditure of a reasonable sum for the holding of annual meetings, the publication of reports and papers containing practical information concerning beekeeping, therefore, to sustain the same and enable this organization to defray the expenses of annual meetings, publishing reports, suppressing foul brood among bees in the State, and promote the industry in Illinois;

Section 1. *Be it enacted by the People of the State of Illinois, represented in the General Assembly:* That there be and is hereby appropriated for the use of the Illinois State Beekeepers' Association the sum of one thousand dollars ($1,000) per annum for the years 1917, 1918. For the purpose of advancing the growth and developing the interests of the beekeepers of Illinois, said sum to be expended under the direction of the Illinois State Beekeepers' Association for the purpose of paying the expenses of holding annual meetings, publishing the proceedings of said meetings suppressing foul brood among bees in Illinois, etc.

Provided, however, That no officer or officers of the Illinois State Beekeepers' Association shall be entitled to receive any money compensation whatever for any services rendered for the same, out of this fund.

Sec. 2. That on the order of the President, countersigned by the Secretary of the Illinois State Beekeepers' Association, and approved by the Governor, the Auditor of Public Accounts shall draw his warrant on the Treasurer of the State of Illinois in favor of the treasury of the Illinois State Beekeepers' Association for the sum herein appropriated.

Sec. 3. It shall be the duty of the Treasurer of the Illinois State Beekeepers' Association to pay out of said appropriation, on itemized and receipted vouchers, such sums as may be authorized by vote of said organization on the order of the President countersigned by the Secretary, and make annual report to the Governor of all such expenditures, as provided by law.

Itemized in the Omnibus Bill as follows:

For shorthand reporting	$ 200.00
For postage and stationery	50.00
For printing	550.00
Expense of meetings	200.00
Total amount of the appropriation	$1,000.00

The Assembly ruled that this is not to be paid in *lump* but drawn on itemized accounts.

CODE OF RULES AND STANDARDS FOR GRADING APIARIAN EXHIBITS AT FAIR AS ADOPTED BY ILLINOIS STATE BEEKEEPERS' ASSOCIATION.

COMB HONEY.

Rule 1. Comb honey shall be marked on a scale of 100, as follows:

Quantity	40	Style of display	20
Quality	40		

Rule 2. Points of quality should be:

Variety	5	Straightness of comb	5
Clearness of capping	10	Uniformity	5
Completeness of capping	5	Style of section	5
Completeness of filling	5		

Remarks: 1. By variety is meant different kinds, with regard to the sources from which the honey is gathered, which adds much interest to an exhibit.

2. By clearness of capping is meant freedom from travel stain and a water soaked appearance. This point is marked a little high, because it is a most important one. There is no better test of the quality of comb honey than the appearance of the cappings. If honey is taken off at the proper time, and cared for as it should be, so as to preserve its original clear color. body and flavor will take care of themselves, for excellence in the last two points always accompanies excellence in the first. Clover and basswood honey should be white; heartsease, a dull white tinged with yellow; and Spanish needle, a bright yellow.

3. By uniformity is meant closeness of resemblance in the sections composing the exhibit.

4. By style is meant neatness of the sections, freedom from propolis, etc.

5. Honey so arranged as to show every section should score the highest in style of display, and everything that may add to the tastiness and attractiveness of an exhibit should be considered.

EXTRACTED HONEY.

Rule 1. Extracted honey should be marked on a scale of 100, as follows:

Quantity	40	Style of display	15
Quality	45		

Rule 2. The points of quality should be:

Variety	10	Style of package	10
Clearness of color	5	Variety of package	5
Body	5	Finish	5
Flavor	5		

Remarks: 1. Light clover honey pouring out of a vessel is a very light straw color; Spanish needle, a golden hue, and dark clover honey, a dull amber.

2. Style of package is rated a little high, not only because in that consists the principal beauty of an exhibit of extracted honey, but also because it involves the best package for marketing. We want to show honey in the best shape for the retail trade, and that, in this case, means the most

attractive style for exhibition. Glass packages should be given the preference over tin; flint glass over green, and smaller vessels over larger, provided the latter run over one or two pounds.

3. By variety of package is meant chiefly different sizes; but small pails for retailing, and, in addition, cans or kegs (not too large) for wholesaling, may be considered. In the former case, pails painted in assorted colors, and lettered "Pure Honey," should be given the preference.

4. By finish is meant capping, labeling, etc.

5. Less depends upon the manner of arranging an exhibit of extracted than of comb honey, and for that reason, as well as to give a higher number of points to style of package, a smaller scale is allowed for style of display.

SAMPLES OF COMB AND EXTRACTED HONEY.

Rule 1. Single cases of comb honey, entered as such for separate premiums, should be judged by substantially the same rules as those given for a display of comb honey, and samples of extracted, by those governing displays of extracted honey.

Rule 2. Samples of comb or extracted honey, as above, may be considered as part of the general display in their respective departments.

GRANULATED HONEY.

Rule 1. Candied or granulated honey should be judged by the rules for extracted honey, except as below.

Rule 2. The points of quality should be:

Variety	10	Style of package	10
Fineness of grain	5	Variety of package	5
Color	5	Finish	5
Flavor	5		

Rule 3. An exhibit of granulated honey may be entered or considered as part of a display of extracted honey.

NUCLEI OF BEES.

Rule. Bees in observation hives should be marked on a scale of 100, as follows:

Color and markings	30	Quietness	5
Size of bees	30	Style of comb	5
Brood	10	Style of hive	10
Queen	10		

Remarks: 1. Bees should be exhibited only in the form of single frame nuclei, in hives or cages with glass sides.

2. Italian bees should show three or more bands, ranging from leather color to golden or light yellow.

3. The markings of other races should be those claimed for those races in their purity.

4. A nucleus from which the queen is omitted should score zero on that point.

5. The largest quantity of brood in all stages or nearest to that should score the highest in that respect.

6. The straightest, smoothest and most complete comb, with the most honey consistent with the most brood, should score the highest in that respect.

7. That hive which is neatest and best made and shows the bees, etc., to the best advantage should score the highest.

QUEEN BEES.

Rule. Queen bees in cages should be marked on a scale of 100, as follows:

Quantity ..... 40 Style of caging and display..... 20
Quality and variety..... 40

Remarks: 1. The best in quality consistent with variety should score the highest. A preponderance of Italian queens should overweigh a preponderance of black ones, or, perhaps, of any other race or strain; but sample queens of any or all varieties should be duly considered. Under the head of quality should also be considered the attendant bees. There should be about a dozen with each queen.

2. Neatness and finish of cages should receive due consideration, but the principal points in style are to make and arrange the cages so as to show the inmates to the best advantage.

BEESWAX.

Rule. Beeswax should be marked on a scale of 100, as follows:

Quantity ..... 40 Quality 40
Style of display..... 20

Remarks: 1. Pale, clear, yellow specimens should score the highest, and the darker grades should come next in order.

2. By style is meant chiefly the forms in which the wax is molded and put up for exhibition. Thin cakes or small pieces are more desirable in the retail trade than larger ones. Some attention may be given to novelty and variety.

FOUL BROOD AND OTHER DISEASES OF BEES.

Foul brood—bacillus alvei—is a fatal and contagious disease among bees, dreaded most of all by beekeepers. The germs of disease are either given to the young larval bee in its food when it hatches from the egg of the queen bee, or it may be contagion from a diseased colony, or if the queen deposits eggs, or the worker bees store honey or pollen in such combs. If in any one of the above cases, the disease will soon appear, and the germs increase with great rapidity, going from one little cell to another, colony to colony of bees, and then to all the neighboring apiaries, thus soon leaving whole apiaries with only diseased combs to inoculate others. The Island of Syria in three years lost all of its great apiaries from foul brood. Dzierzon, in 1868, lost his entire apiary of 500 colonies. Cowan, the editor of the British Bee Journal, recently wrote: "The only visible hindrance to the rapid expansion of the bee industry is the prevalence of foul brood, which is so rapidly spreading over the country as to make beekeeping a hazardous occupation."

Canada's foul brood inspector, in 1890 to 1892, reported 2,395 cases, and in a later report for 1893 to 1896, that 40 per cent of the colonies inspected were diseased. Cuba is one of the greatest honey producing countries, and was lately reported to me by a Wisconsin beekeeper who has been there, and will soon return to Wisconsin: "So plentiful is foul brood in Cuba that I have known whole apiaries to dwindle out of existence from its ravages, and hundreds more are on the same road to sure and certain death. I, myself, took, in 90 days in Cuba, 24,000 pounds of fine honey from 100 colonies, but where is that apiary and my other 150-colony apiary? Dead from four brood." Cuba, in 1901, exported 4,975,600 pounds of honey, and 1,022,897 pounds of beeswax.

Cuba at present has laws to suppress foul brood, and her inspector is doing all possible to stamp the same from the island.

Even in Wisconsin I know of several quite large piles of empty hives, where also many other apiaries where said disease had gotten a strong foothold.

By the kindness of the Wisconsin beekeepers, and, in most cases, by their willing assistance, I have, during the last five years, gotten several counties free of the disease, and at the present writing, March 12, 1902, have what there is in Wisconsin under control and quarantined. This dreadful disease is often imported into our State from other states and counties, so we may expect some new cases to develop until all the states shall enact such laws as will prevent further spread of the same. Arizona, New York (1899), California (1891), Nebraska (1895), Utah (1892), Colorado (1897), have county inspectors, and Wisconsin (1897), and Michigan (1901) have state inspectors. The present Wisconsin law, after five years of testing and rapid decrease of the disease, is considered the best, and many other states are now making efforts to secure a like law.

There are several experimental apiaries in Canada, under control of the Ontario Agricultural College; also a few in the United States, especially in Colorado, that have done great work for the beekeeping industry, and their various published bulletins on the same are very valuable. The Wisconsin State Beekeepers' Association has asked that an experimental apiary might be had on the Wisconsin Experimental Farm, but at present there are so many departments asking for aid that I fear it may be some time before beeculture will be taken up.

CAUSES OF FOUL BROOD.

1. Many writers claim foul brood originates from chilled or dead brood. Dr. Howard, of Texas, one of the best practical modern scientific experimenters, a man of authority, has proven beyond a doubt that chilled or common dead brood does not produce foul brood. I have, in the last five years, also proven his statement to be true in Wisconsin, but I do believe such conditions of dead brood are the most favorable places for lodgment and rapid growth of disease. Also, I do not believe foul brood germs are floating in the air, for, if they were, why would not every brood-comb cell of an infected hive become diseased? I believe that this disease spreads only as the adult bees come in contact with it, which is often through robber bees. Brood-combs should not be removed from any colony on cold or windy days, nor should they be left for a moment in the direct rays of sunshine on hot days.

2. The foul brood may be caused by the need of proper food and temperature. Generally this disease does not appear to be serious during a honey flow, but at the close of the honey season, or at time of scarcity, it is quite serious, and as the bees at such times will rob anywhere they can find stores, whether from healthy or diseased combs, it is the duty of every beekeeper to keep everything carefully protected. Hive entrances contracted, no old combs or any article with a drop of honey in where the bees can get to it. While honey is coming in from the various flowers, quite a portion is used direct as food for the larval bee, and with such no disease would be fed to the bees. Such fed bees, even in a diseased hive, will hatch, as is often the case. I never knew a case where a bee hatched from a brood cell that had ever had foul brood in. If the germs of disease are there in the dried scale attached to the lower side walls, bees will store honey therein; the queen will deposit eggs, or the cell may be filled with pollen, or beebread, as some call it. Said honey, or pollen, when it comes in contact with those germs of disease, of the food given to the young bee, if in the proper temperature, said germs of disease will grow and develop rapidly.

CAUSES OF CONTAGION.

I fully believe that if the history of foul brood in Wisconsin were known, nearly every case could be traced to contagion from diseased combs, honey, or from home diseased queen breeders' cages. There are some instances where I have traced the history of contagion in Wisconsin:

1. Diseased apiaries, also single colonies, sold either at auction or private sale. Several law suits have resulted in the settlement of some of the cases.

2. Brood-combs and various implements from diseased hives, used by other beekeepers, and borrowed articles.

3. All the bees in an apiary dead from foul brood, and the hives having an abundance of honey in the brood-combs, said combs placed out by the side of hives, so that neighbor's bees might get the honey. From those combs I lined robber bees to seven other apiaries, and each time became diseased and were treated.

4. Robber bees working on empty honey packages in the back yards of grocery stores and baking factories. Said honey came from diseased apiaries, some located in far distant states, even Cuba.

5. Loaning of hives, combs, extractors, and even empty honey packages.

6. Buying honey from strangers, or not knowing where it was produced, and feeding it to bees without boiling the honey.

7. Too common a practice of using old brood-combs from some apiary where the owner's bees have died from "bad luck," as he calls it.

8. Queen bee—by buying queen bees from strangers and introducing them in the cages they came in. I have traced several new outbreaks of the disease to the hives where such queens were introduced, and the queens came from distant states. To be safe, on arrival of queen, put her carefully alone in a new and clean cage with good food in it. Keep her in there, warm

and comfortable, for a few hours before introducing. The shipping cage and every bee that came with the queen should be put in the stove and burned. I do not think there is any danger from the queen so treated, even from diseased hives, but I do know of many cases where disease soon appear in the hives, where the shipping cage and bees were put in with the colony. The great danger is in the food in said cage being made from diseased honey. I was called to attend a state beekeepers' meeting in another state, and I asked if any there had had experience with foul brood. There was a goodly number of raised hands. Then I asked: "Do any of you think you got the disease by buying queen bees?" Again several hands were raised. Even beekeepers there had traced the disease in their apiaries to the buying of queens, and all from the same breeder. If you get queens from abroad, I hope you will do with them as I have described above. Better be on the safe side.

EXPERIMENTS.

1. A prominent Wisconsin beekeeper some years ago had foul brood among his bees so bad that he lost 200 colonies before the disease was checked. Having a honey extractor and comb foundation machine, he first boiled the hives in a large sorghum pan, then in a kettle all combs were melted after the honey was extracted; the honey was boiled and also the extractor and implements used. The bees were returned to their hives on comb foundation he made from the wax made from the melted combs, then fed the boiled honey. Several years have passed, and there has been no sign of disease in his apiary since.

2. Foul brood germs are not always killed when exposed to a temperature of 212 deg. F. (boiling point) for 45 minutes. But in every case where the combs are boiled in boiling water, and same were well stirred while boiling, no germs were alive.

3. Foul brood in brood-combs is not destroyed when exposed to the temperature of Wisconsin winters of 20 deg. below zero, and in one case I developed foul brood from combs that had been exposed to 28 deg. below zero.

4. Honey, if stored in diseased combs, acts as a preserving medium, and in such cases the germs of disease will remain so long as the comb is undisturbed. Four years at least.

5. Honey or beeswax, or the refuse from a solar or sunheat extractor, is not heated enough to kill foul brood germs. Several cases of contagion where robber bees worked on solar extractor refuse or honey.

6. Comb foundation made by supply manufacturers is free from live germs of disease and perfectly safe to use. To prove this experiment beyond a doubt, I took a quantity of badly diseased brood-combs from several apiaries and render each batch of combs into wax myself on the farm where found. Then on my own foundation mill I made some brood foundation. I also took quite a quantity more of said wax, went to two wholesale comb foundation manufacturers, and both parties willingly made my experimental wax into comb foundation, just the same as they do every batch of wax, I then divided the various makes of foundation, and selected 20 of the best beeyards in Wisconsin, where no disease has ever been known; had the same placed in 62 of their best colonies, and in every case no signs of disease have appeared. Those same colonies continue to be the best in the various apiaries.

SYMPTOMS OF FOUL BROOD.

1. The infected colony is not liable to be as industrious. Hive entrances with few guard bees to protect their home. Sometimes fine dirt or little bits of old comb and dead bees in and around the hive entrance, and often robber bees seeking entrance.

2. Upon opening the hive, the brood in the combs is irregular, badly scattered, with many empty cells which need inspection.

3. The cappings over healthy brood are oval, smooth, and of a healthy color peculiar to honey bee brood, but if diseased, the cappings are sunken, a little darker in color, and have ragged pin holes. The dead larval bee is of a light color, and, as it is termed, ropy, so that if a toothpick is inserted and slowly withdrawn, this dead larva will draw out much like spittle or glue.

4. In this ropy stage there is more or less odor peculiar to the disease; it smells something like an old, stale gluepot. A colony may be quite badly affected and not admit much odor, only upon opening of the hive or close examination of the brood. I have treated a few cases where the foul brood odor was plainly noticed several rods from the apiary.

5. Dried Scales—If the disease has reached the advanced stages, all the above described conditions will be easily seen and the dried scales as well. This foul matter is so tenacious that the bees cannot remove it, so it dries down on the lower side wall of the cell, midway from the bottom to front end of the cell, seldom on the bottom of the cell. According to its stage of development, there will be either the shapeless mass of dark brown matter, on the lower side of the cell, often with a wrinkled skin covering, as if a fine thread had been inserted in the skin lengthwise and drawn enough to form rib-like streaks on either side. Later on it becomes hardened, nearly black in color, and in time dries down to be as thin as the side walls of the cell. Often there will be a small dried bunch at the front end of the cell, not larger than a part of a common pin head. To see it plainly, take the comb by the top bar and hold it so that a good light falls into the cell at an angle of 75 degrees from the tip of the comb, while your sight falls upon the cell at an angle of about 45 degrees. The scales, if present, will easily be seen as above described. This stage of disease in combs is easily seen, and is always a sure guide or proof of foul brood. Such combs can never be used safely by the bees, and must be either burned or carefully melted. Be sure not to mistake such marked combs in the spring for those soiled with bee dysentery. The latter have a somewhat similar appearance, but are more or less surface soiled, and will also be spotted or have streaked appearance by the dark brown sticky excrements from the adult bees.

TREATMENT.

"A beekeeper who does not discover foul brood, before his nostrils remind him that there is something wrong with his bees, is not the proper person to treat the case." Dr. Howard, in his valuable book on foul brood, states: "I regard the use of all drugs in the treatment of foul brood as a useless waste of time and material, wholly ineffectual, inviting ruin and total loss of bees. Any method which has not for its object the entire removal of all infectious material beyond the reach of both bees and brood, will prove detrimental and destructive, and surely encourage the recurrence of the disease." In Wisconsin, I have tried many methods of treatment, and cured some cases with each method; but the one that never fails, if carefully followed, and that commends itself, is the McEvory treatment. Canada's foul brood inspector has cured foul brood by the wholesale—thousands of cases.

McEVOY TREATMENT.

"In the honey season, when the bees are gathering honey freely, remove the combs in the evening and shake the bees into their own hives; give them frames with comb foundation starters, and let them build comb for four days. The bees will make the starters into comb during the four days, and store the diseased honey in them, which they took with them from the old comb. Then, in the evening of the fourth day, take out the new combs and give them comb foundation (full sheets) to work out, and then the cure will be complete. By this method of treatment all the diseased honey is removed from the bees before the full sheets of foundation are worked out. All the old foul brood combs must be burned or carefully made into wax,

after they are removed from the hives, and all the new combs made out of the starters during the four days must be burned or made into wax, on account of the diseased honey that would be stored in them. All the curing or treating of diseased colonies should be done in the evening, so as not to have any robbing done or cause any of the bees from the diseased colonies to mix and go with the bees of healthy colonies. By doing all the work in the evening, it gives the bees a chance to settle down nicely before morning, and then there is no confusion or trouble. This same method of curing colonies of foul brood can be carried on at any time from May to October, when the bees are not getting any honey, by feeding plenty of sugar syrup in the evenings to take the place of the honey flow. It will start the bees robbing and spread the disease, to work with foul brood colonies in warm days when the bees are not gathering honey, and for that reason all work must be done in the evenings when no bees are flying.

"When the diseased colonies are weak in bees, put the bees, two, three, or four colonies together, so as to get a good sized colony to start the cure with, as it does not pay to spend time fussing with little, weak colonies. When the bees are not gathering honey, any apiary can be cured of foul brood by removing the diseased combs in the evening and giving the bees frames with comb foundation starters on. Then, also, in the evening feed the bees plenty of sugar syrup, and they will draw out the foundation and store the diseased honey which they took with them from the old combs; on the fourth evening remove the new combs made out of the starters, and give the bees full sheets of comb foundation, and feed plenty of sugar syrup each evening, until every colony is in first class order. Make the syrup out of granulated sugar, putting one pound of water to every pound of sugar, and bring it to a boil. As previously stated, all the old comb must be burned, or made into wax, and so must all new combs made during the four days. No colony is cured of foul brood by the use of any drug.

"A. I. Root, of Medina, Ohio, says: 'The starvation plan, in connection with burning the combs and frames and building the hives, has worked the best in treating foul brood. It never appeared after each treatment, though it did in some cases where the hives were honey-stained and not boiled, thus confirming the theory or fact of spores.'"

All the difference from the McEvory treatment that I practice is this: I dig a peep pit on level ground near the diseased apiary, and after getting a fire in the pit, such diseased combs, frames, etc., as are to be burned are burned in this pit in the evening, and then the fresh earth from the pit returned to cover all from sight. Often I use some kerosene oil, a little at a time being poured on old brood combs, or those having much honey in, as they are hard to burn. If diseased combs with honey in are burned on the surface of the soil, there is great danger; the honey, when heated a little, will run like water on the soil, and in the morning the robber bees will be busy taking home the diseased honey that was not heated enough to kill germs of foul brood.

I also cage the queen while the bees are on the five or six strips of foundation. It helps to keep the colony from deserting the hive and going to other colonies.

R. L. Taylor, Michigan University Experimental Apiary, reports: "The plan that the colony be shaken out into another hive after being allowed to build comb for four days, I have proven, in 100 cases, to be unnecessary."

In Wisconsin I, too, have cured several cases by the one transferring, when honey was not coming in very freely, but it is better, and a great saving of time to both bees and owner, to exchange in three or four days, those foundation starters, for full sheets of foundation. Diseased brood combs and those with honey in, if melted in a sun or solar extractor, the wax, honey or residue is not hot enough to kill germs of foul brood. This I have proven by several experiments. It must be boiled and well stirred while boiling, to be safe.

I do not believe in, or practice, burning any property, such as hives, bees, beeswax or honey, that can be safely treated and saved. Many times

it is poor economy to save all, and so many beekeepers are not so situated as to keep all diseased materials from robber bees while taking care of it; the best and only safe way is to burn the diseased combs and frames.

UTAH.

Utah has county inspectors, and from one who has remarkable success I copy the report of his method of treatment.

"Wherever found it should be dealt with earnestly and with dispatch. If the colony is weak, I recommend something to kill the bees, and, in order to do this without letting a bee escape, take a tablespoonful of sulphur and place it in the hive entrance of the hives; if there is any breeze, turn the hive so it will blow in the entrance. Then fire the sulphur and it will soon kill the bees. This should be done early in the morning, before any of the bees are flying, as one bee escaping from the hive might carry the disease to any colony with which it may take up its abode. If the colony is a strong one, I would keep the entrance partly closed, so as to prevent any other bees from getting in. Then as soon as fruit blossoms come out so the bees can obtain honey, I treat them. I procure an empty box of any kind, so it is clean, then find the queen, put her in a screen wire cage, which is easily made. Take a small piece of screen roll it up and tie a string around either end; cork up one end, then place the queen and a few workers, for company, in the cage, and place in the other end cork. Put same in this box, and shake all the bees out of their hive into this box. This must be done in the evening, when no bees are flying. Keep the queen in this box for 24 to 48 hours, allowing the bees to fly in and out as they please. Next take a clean hive, with good, healthy combs or foundation, and shake bees into it, letting the queen go, and they will be free from disease. The old combs are melted into wax, bringing same to a good boil. Often washing with boiling water any hives or implements that might contain disease. Whenever strictly followed, this has affected a cure." C. Wilcox, Emery Co., Utah.

PICKLED BROOD.

Some seasons pickled brood is quite bad among bees, and in a few cases I have known it to reduce large colonies, even large apiaries, to doubtful hopes, but those same colonies, after I gave them treatment, were in a month free from disease. Sometimes it takes as careful handling as if foul brood. I do not believe it is contagious, for all I have seen 60 colonies in one apiary badly reduced by it. As an experiment, one of my out-apiaries had 50 colonies at one time with pickled brood. I treated them, and all were soon free from dead brood. At the same time I took ten of the worst brood-combs, where at least two-thirds of the brood were dead, and placed these combs in other strong, healthy colonies. They at once cleaned out the dead brood, and reared as nice brood as one could ask for.

SYMPTOMS.

The larval bees (in last of May and through June show light brown spots; a little later the cappings have small holes in—the cappings are not shrunken or dark colored, as in foul brood. The dead bee will be first swollen, with a black head dried to a hard bunch, and often turned up—Chinaman-shoe-like. The skin of the dead bee is quite tough, and, if punctured, the thin, watery fluid of the body will flow as freely as water, often a little yellow or brownish colored from the dissolved pollen from the abdomen of the bee. It has very little or no smell; does not at any time stick to the walls of the comb; is easily pulled out of the cell; is never ropy or sticky, and, if the colony is properly cared for, the bees will take care of themselves. Plenty of liquid, unsealed honey and pollen near the brood, and hives so protected as to keep the bees and brood comfortable on cold days and nights.

Never put bees on old black brood-combs, or those with dead broods in; better make wax of the combs, and give the bees full sheets of brood-comb foundation.

TREATMENT.

Keep all colonies strong, with plenty of unsealed honey near the brood, and if hives are properly sheltered, so as to be warm on cold days and nights, there will be little or no pickled brood. If the queen is old, shows signs of weakness by putting several eggs in one brood cell and nursing several others, so that the brood is patchy, I would kill such a queen, feed the bees a little, and, when queen cells are started, remove them all and give them a queen and bees, between two of her own brood-combs from a hive where she has lived. I do not think pickled brood is often the fault of the queen, but rather a lack of proper food and heat in the hive. In most cases, a shortage of liquid honey, or moldy pollen, even in hives with plenty of sealed honey in the outer combs. There is a time in spring in Wisconsin, between dandelions and white clover bloom, when there is no honey coming in from flowers, and often cold days and nights, so that the live bees consume the liquid, unsealed honey first, and cluster in a compact body to keep warm; the result often is the larval bee, just changed from the egg to a tender little grub, is either starved, half-fed or chilled, so that it grows slowly, and too often it dies, and then it is we first notice this about the time white clover honey begins to come in. In other parts of the state, where pickled brood appeared, it was from the same cause, and at other dates, which was due to a difference of time of honey bloom.

Wherever I fed daily some honey, or even sugar syrup, and kept the hive warm, all dead brood soon disappeared while in the same apiaries other colonies affected and not so treated, continued for some time, but got rid of it as soon as treated.

Strong colonies of bees in the fall, with a young laying queen, and an abundance of good honey, sealed or capped by the bees, if properly cared for during winter, whether in the cellar or in chaff hives, wintered out of doors in sheltered location, seldom have pickled brood, chilled or other dead brood, or dysentery, and are the colonies that give their owner profit.

BLACK BROOD.

Black brood is another fatal and contagious disease among bees, affecting the old bees as well as the brood. In 1898, 1899 and 1900, it destroyed several apiaries in New York. Last year I found one case of it in Wisconsin which was quickly disposed of. Dr. Howard made more than a thousand microscopic examinations, and found it to be a distinct form of bacteria. It is most active in sealed brood. The bees affected continue to grow until they reach the pupa stage, then turn black and die. At this stage there is a sour smell. No decomposition from putrefaction germs in pickled brood. In black brood the dark and rotten mass in time breaks down and settles to lower side walls of the cell; is of a watery, granulated, syrupy fluid, jelly-like; is not ropy or sticky, as in foul brood, and has a peculiar smell, resembling sour, rotten apples. Not even a house fly will set a foot upon it.

TREATMENT.

Best time is during honey flow, and the modified McEvoy plan, much as I have treated foul brood, by caging the queen five days, remove the foundation starters and giving full sheets, keeping queen caged five days longer. As great care should be taken of diseased hives, combs, honey, etc., as in foul brood.

DYSENTERY.

Dysentery among bees in Wisconsin in the spring of the year is often quite serious. Many colonies die with it. Dysentery is the excrements of the old bees; it is of brownish color, quite sticky, and very disagreeable smelling, and is sometimes mistaken for foul brood.

CAUSES.

1. Bees confined too long in the hives, so that they can no longer withhold their excrements, and are compelled to void the same on the other bees and combs.
2. Poor winter stores, gathered in the fall from honey-dew, cider mills, sorghum mills, rotten fruit; also some kinds of fall flowers.
3. Old and especially moldy pollen or bee-bread.
4. Hives too cold or damp. If moisture from the breath of the bees is not carried out of the hive by some means such as through a deep cushion of some kind over the bees that will absorb moisture and at the same time retain the heat, or by some means of ventilation, so that all is dry and comfortable. If mold forms on the combs or cellar is so damp as to form mold, there is great danger the bees will have dysentery and die.

TREATMENT.

1. First of all, have an abundance of combs of sealed clover or basswood honey in brood frames carefully saved, and see that each colony is wintered on such food. Three or four such combs will winter a fair colony safely, if confined on those combs late in the fall, and the hive contracted to fit the same. This is one of the most important conditions for success in wintering.
2. If in the fall the bees have gathered this unwholesome honey from the above named sources, it should all be extracted and either exchanged for those honey combs, or feed the bees good honey or sugar syrup until winter stores are secured. This should be done before cold weather in the fall.
3. Hives contracted and made comfortable, whether in cellar or outdoors.
4. If wintered in chaff hives outdoors, with feed as above directed, and there come one or two warm spells during winter, so that the bees can have a cleansing flight, they will not have dysentery or dead brood, and will be much stronger when clover opens.

If wintered in the cellar, the bees will not need so much honey, and if the winters are generally long, with doubtful warm spells, the cellar will be best. But to keep the bees from dysentery, so often fatal to cellar-wintered bees, they should have such winter stores as above spoken of, then the cellar kept at a medium temperature, about 32 deg. F., ventilated so the air is fresh, and no mold will form in the cellar. Fresh air-slaked lime on the bottom of the cellar may help, if it is damp or has poor air.

5. Dysentery will not appear if bees are kept on sugar syrup, or best grade white clover or basswood honey, and are in a dry place, either sheltered by cellar or chaff hive.

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